TEXTILE *Technology* DIGEST

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TEXTILE TECHNOLOGY DIGEST

VOLUME 5 NOVEMBER 1948 NUMBER 11

Abstracts

ORGANIC FIBERS I

Elasticity of fibers. New considerations concerning the elasticity of textile fibers. Frederic Maillard & Olivier Roehrich, Conservatoire National des Arts et Meteirs & Andre Fresco, Inst. Textile de France. *Bull. Inst. Textile de France,* No. 6, 9-20 (June, 1948).

The method of interpreting the hysteresis loops obtained on the microapparatus of Chevanard and reported in the first paper (cf. F. Maillaird, O. Roehrich & G. Que'ant. *Bull Inst. Textile de France,* No. 1, 89-118 (Mar. 1947) has been retained. Three types of cotton (Sea Island, Upland, and Bengal) wool (dry and moistened) and acetate rayon (dry and moistened) have been studied. The data and curves for these fibers are given and results are summarized in a table on the modulus of elasticity, coefficient of elastic work, strength, and elongation for wool, nylon, mohair, Rhofil, high tenacity rayon, viscose rayon, raw silk, cotton, acetate rayon, Coco fiber, ramie, and sisal. TTD: 11-48

Fibrous materials. The over-all specific volume, compressibility and resilience of fibrous materials. W. H. Rees. *J. Textile Inst. 39,* T131-41 (Apr. 1948).

An instrument and method for measuring over-all specific volume, compressibility, and resilience of fibrous materials is described and experimental data presented. The over-all specific volume of fibers in bulk depends on the previous treatment to such an extent that differences between fibers of the same type, for instance cotton, was shown to be true of the measurement of compressibility and resilience.

HW TTD: 11-48

Mechanical behavior of fibers. A new concept of the mechanical behavior of fibers. Harris Burte, Geo. Halsey & J. H. Dillon. *Textile Research J. 18,* 449-69 (Aug. 1948).

The first part of this paper is a review of the theories of mechanical behavior of fibers, particularly of the 3 element spring and dashpot model employed by Eyring in previous investigations. Certain failures of this theory are examined and noted. A new theory is described which involves a concept of energy states with fiber elements changing from one to another state as extension takes place. This theory is also examined in terms of experimental data for wool. There are some difficulties in the application of the theory, and these are discussed.

HW TTD: 11-48

X-rays in textiles. X-rays in relation to textiles. R. Meredith. *J. Textile Inst. 39,* 132-40 (Apr. 1948).

This is a brief review of the application of X-ray techniques to the study of fiber structure elements: crystalline structure, molecular orientation, size and shape of crystallites, and degree of crystallinity. 26 references.

HW TTD: 11-48

Vegetable fibers I 1

Cotton. Cotton varieties are growing in importance. P. M. Thomas. *Textile World 98,* 107, 122 (Oct. 1948).

Approximately 12% of the cotton now bought by mills is bought by variety. A cotton fiber table is presented as a quick means for comparing the characteristics and manufacturing performance of the eight leading varieties of cotton. Reprints of this table are available.

LCL TTD: 11-48

Decorticator. New fiber decorticator. Anon. *Textile Industries 112,* 229, 231 (Sept. 1948).

The Fiberator, a new fiber decorticator, is designed for the decortication of any fiber-bearing plant —wet or dry, bast or leaf. Ten to twelve tons of clean fiber can be produced in approximately 8 hours. TTD: 11-48

Jute. Fibre character in relation to spinning quality, with special reference to jute. C. R. Nodder. *Fibres, Fabrics & Cordage 15,* 146-47, 163 (May, 1948).

Good spinning quality in jute may be expected in the following circumstances: a) The raw material should break down in processing to strands which are uniformly of good length and approach as closely as possible a simple, cylindrical form; b) the strands should be fine, uniform and strong,

of low rigidity, and as free as possible from adherent tissue. Similar considerations apply to other bast fibers. The character of the raw material is important in obtaining good spinning quality. TTD: 11-48

Palmetto fiber. Research on palmetto fiber for textile uses. Anon. *Textile Industries 112,* 158 (Feb. 1948).

From consideration of recent investigations into the practicability of removing and making use of fiber from the scrub palmetto, it was concluded that the palmetto fiber does not appear to be readily affected by moisture, so that the wet strength is quite comparable to the dry strength. A considerable amount of pulp is yielded on cleaning and investigations into the use of the pulpy product will be made. Data on the strength of the fiber are given. TTD: 11-48

Ramie. Has ramie finally arrived? Anon. *Textile Colorist 70,* 18-19, 57 (Aug. 1948).

The work of Sea Island Mills, Inc., in producing ramie and ramie products, which they market under the name of "Siland" is described. Also considered are the history of ramie, its characteristics, cultivation, and the problem of decortication. It is claimed that this has been solved by a new decorticating machine developed by Sea Island Mills. TTD: 11-48

Ramie. A study of ramie fibers and their spinning. I. Textilabor. Laboratories des Recherches et d'Expertises pour l'Industrie Textile. *Textielwezen 3,* 37-40 (Dec. 1947); *4,* 33-7 (Jan. 1948; *4,* 23-7 (Feb. 1948); *4,* 23-6 (Apr. 1948); *in French.*

The history of the mechanical decortication of ramie is reviewed. About 100 patents on the decortication of ramie have been granted. The difficulties which have retarded the utilization of this fabric are explained and the work on this subject is summarized. Diagrams and photomicrographs of the bast portion of the ramie stalk are given. A sample of ramie fibers is attached to a page of the text. Some data are given on the fineness of the fibers and of the yarn which can be spun from them. Data are given on the strength of various fibers in comparison with ramie. It is concluded that ramie has a higher tenacity than most other textile fibers. (to be continued). TTD: 11-48

Seaweed. Seaweed industry. Anon. *Silk & Rayon 22,* 270 (Feb. 1948).

The development of the seaweed industry in Scotland is now assured, according to the president of the Scottish Seaweed Research Association, Sir Steven Bilsland. It is estimated that an industry

worth £15,000,000 can be developed. Ample resources of seaweed are around the Scottish coast, and it is expected that a number of products of interest to the textile industry will be derived. TTD: 11-48

DISEASES OF COTTON IN INDIA. B. N. Uppal. Bombay, Indian Central Cotton Committee, 1948. 32 pp.; price: Rs. 2. TTD: 11-48

INSECT PESTS OF COTTON IN INDIA. H. D. Nangpal. Redrafted and rearranged by Khan A. Rahman & Ch. Mohammad Afzal. Bombay, Indian Central Cotton Committee, 1948. 81 pp.; price: Rs. 2. TTD: 11-48

Animal fibers I 2

Fineness of wool. Determination of the fineness of wool samples by sedimentation. Geo. C. LeCompte, USDA.. *Am. Dyestuff Reptr. 37,* 453-456 (July 12, 1948).

Sedimentation tests on short sections of four grades of wool (the liquid used was a dilute aqueous solution of a wetting agent) gave clear distinctions between the grades. It appears that it might be possible with improved apparatus to obtain very rapid answers as to the grades of wool. WPU,jr. TTD: 11-48

Mohair. Mohair in wool. Betty Tanner, Am. Wool Council. *Textile Colorist 70,* 21, 55 (Aug. 1948).

The use of mohair in a variety of fabrics is discussed briefly, particular mention being made of its blending with wool. Recent development of new fabrics utilizing mohair has created new interest in this fiber. TTD: 11-48

Silk. Biological aspects of silk cocoons and silk production. *Silk & Rayon 22,* 712 (May, 1948).

Several types of silk-worms are discussed and the properties and structure of silk fibers are noted briefly. TTD: 11-48

Silk moths. Giant silk moths successfully reared in Britain. Eric Hardy. *Silk & Rayon 22,* 246 (Feb. 1948).

Sources of silk other than the commercial silkworm, *Bombyx mori,* are discussed briefly. Of the several types of large silk moths that have been raised successfully in England, the largest is the giant Atlas moth of the Himalayas (*Attacus atlas*). The Atlas moth inhabits China, Java, and India, and its big cocoon of silk measures about 7 inches in length by 2 or 3 inches broad. TTD: 11-48

Testing grease wool. Reweigh wool when sampling. Anon. *Textile Industries 112*, 219 (Sept. 1948).

Due to the fact that the percentage yield of a lot of wool varies inversely with the moisture content, grease wool must be weighed at the time of coring to give significance to the results in determining clean content yield. TTD: 11-48

Artificial fibers I 3

Artificial staple fibers. Apparatus for spinning artificial fibers. Alvin Lodge (to Am. Viscose Corp.). USP 2 447 984, Aug. 24, 1948.

According to this invention, continuous filaments are provided, during production thereof, with weakened sections at spaced points along their length. The portions which undergo weakening are less resistant to tensile stress than the remaining portions of the filaments, and when the latter are stretched, as by drawing in a drawing frame, they readily break at their weakened points to produce staple fibers which may be of substantially uniform length, or of varying nonuniform length, depending upon the regularity or irregularity of occurrence of the weakened portions along the length of the continuous filaments. In accordance with the invention, a bundle of filaments being extruded through the orifices of a spinneret into a suitable setting medium, which may be a cooling, evaporative or liquid medium, is subjected to the movement of a stream, blast or jet of fluid, gaseous or liquid, relative thereto, the movement comprising a transverse component, as the filaments pass progressively away from the face of the extruding device. The fluid jet moving relatively to the bundle strikes against at least some of the filaments comprising it, while the filaments are sufficiently plastic to insure that the portions thereof which receive the fluid jet are susceptible to weakening, which may be due to a change in cross-section, such as flattening, or to a reduction in denier, in response to the impact of the fluid jet there against. TTD: 11-48

Conditioning filamentary material. Means for conditioning filamentary material. Horace P. Fry, Jr., Richard W. Stanley & Henry J. McDermott. USP 2 447 977, Aug. 24, 1948.

This invention provides means for removing excess liquid from artificial filamentary material advancing from one liquid treating zone to another, or from a liquid treating zone to a drying device or a wind-up device. TTD: 11-48

Cutting apparatus. Cutting apparatus. Dale M. Curtis (to Am. Viscose Corp.). USP 2 447 976, Aug. 24, 1948.

This invention is particularly concerned with that type of fiber-cutting apparatus in which the continuous material is fed to a rotating member having a radial channel through which the material is directed outwardly, generally under the influence of centrifugal force, and from which the material protrudes until cut by a cutting member which co-operates with the periphery of the rotating member. Occasionally, the fibers protruding from the rotating member are not completely severed, either because of dullness of the knife or equivalent cutting member, or because of improper co-action of the knife or filament cutting member with the rotating member. When this occurs, the fiber product will contain a certain proportion of over-length fibers which may be 2 or 3 times as long as the fiber length desired. In accordance with the present invention, over-length fibers are detected and such detection initiates the operation of means for interrupting the delivery of the cut fibers to the next succeeding stage of processing, thereby preventing the mixing of over-length fibers with the standard length fibers. The detection of over-length fibers also operates an indicator or alarm. In this fashion, the operator is advised immediately of the improper functioning of the cutting apparatus. TTD: 11-48

Thread advancing reel. Thread advancing reel. Carl A. Castellan (to Am. Viscose Corp.). USP 2 446 525, Aug. 10, 1948.

The present invention provides a distinctly novel type of thread-conveying device or thread advancing reel of essentially simple construction. The construction of the reel is of such character that the bearings and driving mechanism may be readily protected by a relatively simple and inexpensive form of sealing diaphragm or membrane. The reel of the present invention may be either of cantilever or double-end supported construction. In one form the thread-conveying device operates to advance the thread axially thereof at one speed of rotation but at another speed, no axial advance occurs. TTD: 11-48

Thread advancing reel. Thread advancing reel. Richard W. Stanley (to Am. Viscose Corp.). USP 2 447 143, Aug. 17, 1948.

This invention relates to thread-advancing reels which may be used for the production of a yarn store which is continuously advanced axially of the periphery of the reel, during which time it may be subjected to fluid treatment in the manner and for the purposes conventional in the art, and which is adaptable to either a cantilever or double-

end supported structure. The invention provides a reel of this type based upon a structural principle which, when embodied in a reel of considerable axial length results in substantially uniform efficiency in thread-advancing action throughout the length of the reel, and, at the same time, is adapted to operation at high speeds of rotation.
TTD: 11-48

Thread advancing reel. Thread advancing reel. Richard W. Stanley & Carl A. Castellan (to (Am. Viscose Corp.). USP 2 450 024, Sept. 28, 1948.

This invention relates to thread-advancing reels which may be used for the production of a yarn store which is continuously advanced axially in relation to the periphery of the reel, during which time it may be subjected to fluid treatment. The main object of the present invention is to provide an improved reel of as simple construction as possible for the purpose of rendering reels of this type more commercially practicable when it is desired to employ a reel of short axis of cantilever form, such as may be adapted to replace a godet and associated warp-displacing guide.
TTD: 11-48

Yarn feed. Yarn feed and distributor wheel. Henry J. McDermott (to Am. Viscose Corp.). USP 2 447 131, Aug. 17, 1948.

The main object of the present invention is to provide an improved device for distributing a yarn, thread, strand or other filamentary material in a regular fashion on a moving belt or the like. In operation, a yarn, strand, thread or other filamentary material, preferably in a wet condition, is fed over the apertures on the feed wheel, adhering thereon and rotating with the feed wheel. The yarn or the like is carried around to the underside of the feed wheel, to a point where it is in contact with the fluid forced through the apertures by the oscillating nozzle. As the yarn is freed from the feed wheel it falls into layers due to the oscillation of the nozzle and the rotation of the feed wheel. TTD: 11-48

THE BRITISH RAYON MANUAL. Harlequin Press Co., Ltd., 1947; 256 pp.; price: $2.00.

Reviewed in *Rayon Textile Monthly 29*, 116 (June, 1948). TTD: 11-48

Rayons I 3 a

Cellulose triacetate. Solutions of cellulose triacetate and process of preparing the same. Keith Famulener & Russell P. Easton (to Gen. Aniline & Film Corp.). USP 2 447 459, Aug. 17, 1948.

Stable solutions of cellulose triacetate are prepared by use of a solvent mixture consisting of an alkyl poly-halide boiling not lower than 40°C (80-95 parts) and a liquid alcohol (20-5 parts). Swelling is effected by stirring the triacetate in the solvent mixture at a temperature between —75° and 0°C. Solubilization of the cellulose triacetate is then caused by warming the swollen gel to room temperature, and is thought to depend upon formation of a complex with the alcohol.
WPU,jr. TTD: 11-48

Dissolving cellulose. Method of dissolving cellulose in ammoniacal copper compounds. Theodor Lieser (to Am. Bemberg Corp.). USP 2 447 514, Aug. 24, 1948.

At temperatures around —8°C, cellulose dissolves in solutions containing 50% less ammonia, and 17% less copper than is normally required in present operations, thus affording increased economy in the cuprammonium rayon process. Production of a spinning solution containing 6-12% cellulose and only 3-6% ammonia is described. Copper is added in the form of the oxide and other salts.
ELW TTD: 11-48

Electronic spectrometer. Quick checking of metallic constituents of spinning baths. C. C. Downie. *Silk & Rayon 22*, 270 (Feb. 1948).

Features and method of operation of the electronic spectrometer in analyzing spinning baths for metals content are given. The device, by means of a system of phototubes, amplifiers, and associated electronic circuits, provides for the direct reading of the results of analysis. Determinations are recorded on a tape, and from the numbers visible on the tape at the reading aperture, the chemical percentage for each element can be read off directly. TTD: 11-48

High strength rayon. The long search for high strength in man-made fibres. 3. Three regenerated cellulose high tenacity rayon yarns. 4. Development of high tenacity yarns by the viscose process. Anon. *Silk & Rayon 22*, 110, 112, 114, 116 (Jan. 1948); 552, 554 556, 558, 560 (Apr. 1948).

Methods of producing high tenacity regenerated cellulose rayons are described and discussed and the physical and chemical factors involved are considered. It is suggested that in order to obtain the high tenacity rayon yarns needed for the manufacture of automobile tires it will be necessary to produce filaments of poor crystallinity with good orientation. This type of rayon is held to be more uniform in structure and less likely to

rupture under strain at localized points. For parts 1 and 2 see *TTD: 4*, 305). TTD: 11-48

Rayon industry in Spain. Spain's rayon industry growing. A Special Correspondent. *Rayon & Synthetic Textiles 29*, 51-2 (Sept. 1948).

The development of the rayon industry in Spain is reviewed briefly and its present condition noted. There are no official research laboratories in the country, all new technical developments being introduced through the foreign connections of the various companies. For the time being Spain's requirements for weaving and knitting are more than sufficiently guaranteed by home-produced rayon. TTD: 11-48

Rayon manufacturing. Potential rayon manufacturing facilities on the West Coast. Paul W. Frisk. *Rayon & Synthetic Textiles 29*, 55-8 (Sept. 1948).

A comprehensive survey of factors involved in rayon manufacture is given with respect to the facilities available on the West Coast. The topics discussed include raw materials, water resources, waste disposal, fuel and power, labor supply, wage scale, shipping facilities and marketing conditions. While there is a large potential market, the present weaving and knitting facilities on the West Coast are too small to consume the entire output of an economical size rayon plant. TTD: 11-48

Rayon production. Changes in domestic rayon yarn deniers and filament numbers. H. R. Mauersberger. *Rayon Textile Monthly 29*, 50-1 (Mar. 1948).

Changes that have occurred in the domestic production in regular filament yarns with particular regard to the denier and the respective filament numbers, as well as changes in the domestic production of semi- and high-tenacity filament yarns are given. TTD: 11-48

Rayon spinning machine. Butterworth announces changes in rayon spinning machines. Anon. *Textile Industries 112*, 227, 229 (Sept. 1948).

Features of an improved rayon pot spinning machine are discussed and include a redesigned traverse system, an acid resistant funnel bracket, self-aligning and self-lubricating motors, etc. TTD: 11-48

Spinneret. Spinneret. Dan B. Wicker (to Am. Viscose Corp.). USP 2 447 994, Aug. 24, 1948.

This invention provides a spinneret having a non-circular orifice area which can readily be spanned by the normal human hand and in which 5,000 or more orifices can be disposed with comparatively

low orifice density. In accordance with the invention, spinnerets are provided having a non-circular orifice area, one dimension of which is less than about 4½ in., and spannable by the normal human hand, while the other dimension is at least 3 in., the latter dimension being variable from 3 in. to considerably greater than 3 in., depending upon the total number of orifices. The device thus permits an operator to "pick" the lump or blob of viscose formed by filaments not withdrawn from the spinneret. TTD: 11-48

Strengthened rayons. The properties of strengthened rayons (formol treatment). Mlle. Goujet & M. le Chanoine Pinte, Centre des Recherches de la Soierie. *Bull. Inst. Textile de France*, No. 6, 25-34 (June 1948); *in French.*

The weakening of rayon by swelling in water can be decreased by treating it with formol. The history of this process is traced and 15 references are cited. The properties of yarns after treatment with a solution containing 7% formol and a catalyst of aluminum perchlorate were determined. A series of rayons with increasing amounts of swelling were produced by increasing the concentration of the catalyst. The swelling, the formol content, the tenacity, and the elongation were measured. The *nervosity* was measured by a procedure described in *Bull. Inst. Textile de France*, No. 1, 144-6 (Mar. 1947). It appears to be a measurement of the resistance of a fabric to creasing. The samples were also nitrated to determine the degree of polymerization, polydispersions and the absorption of solvents by the nitrocelluloses. The effect of 10% NaOH solution on these materials was also investigated. It is concluded that the increase in the tenacity observed in the strengthened rayon is due to the decrease in the amount of water taken up and that of *nervosity* measurements show that the formol treatment increases the resistance to wrinkling. TTD: 11-48

Stretching yarns. Stretching of cellulose ester yarn. Camille Dreyfus. USP 2 447 567, Aug. 24, 1948.

In preparation of high-tenacity regenerated cellulose yarns of the saponified acetate type, the necessity for super-atmospheric pressure of the steam used to soften the acetate yarn during stretching is obviated by employing an acetate yarn of lower acetyl content, e.g., 40-45%, calculated as acetic acid.

MC TTD: 11-48

Synthetic fibers I 4

Elastic nylon. Elastic nylon yarn is developed for

weaving and knitting. *Rayon Textile Monthly 29*, 77 (Mar. 1948).

An elastic nylon yarn suitable for both knitting and weaving has been developed by the Dorgin Textile Corp. The process is said to impart a coiled appearance to the individual nylon filament by means of mechanical and chemical treatment. The yarns are known as "Rekoylon". They are made of several ends of 60 filament nylon and are bulky in character. Elasticity is said to be unaffected by laundering. TTD: 11-48

Nylon patents. German patents connected with the manufacture of nylon-type condensates. Paul Wengraf. *Rayon Textile Monthly 29*, 71-3, 74 (Mar. 1948); 77-8 (Apr. 1948); 65-6 (May, 1948); cf. Wengraf, *Rayon Textile Monthly 28*, (Jan.-Oct., 1947), (TTD: *4*, 354).

A number of U. S. patents, granted to German patentees, and patent applications released by the Office of the Alien Property Custodian, and pertaining to the problem of synthesizing polyamide condensates of the nylon type are presented in digest form. Details concerning the status of these patents are given. The patents are divided into A) methods of preparing polymerizates, B) initial materials, C) processing nylon, and D) objects other than filaments. TTD: 11-48

Orlon. Du Pont acrylic fiber designated "Orlon". Anon. *Textile Industries 112*, 191 (Oct. 1948).

Orlon, a polyacrylonitrile fiber formerly known as Fiber A, which is resistant to sunlight degradation and chemical attack and is able to withstand elevated temperatures, is briefly noted. TTD: 11-48

Polyvinyl alcohol filaments. Method of treating polyvinyl alcohol filaments and treated filament. Elbert M. Shelton & Walter L. Thompson (to Johnson & Johnson). USP 2 447 140, Aug. 17, 1948.

Because of its inertness to body reaction, it has been proposed heretofore to use polyvinyl alcohol filaments as a substitute for catgut and silk because sutures made of such materials are often accompanied by stitch abscesses and tissue inflammation. However, polyvinyl alcohol sutures made in accordance with such prior processes are unsatisfactory because of their inability to meet the strength requirements of a good suture, or to retain their strength in the presence of tissue fluids. In accordance with the present invention, polyvinyl alcohol filaments are provided having a relatively high wet to dry strength ratio, i.e., at least as high, if not higher, than the corresponding ratio for catgut, and having a tensile strength substantially in excess of that exhibited by catgut whether wet or dry. This invention provides a process of treating a polyvinyl alcohol filament to improve its tensile strength, which includes stretching the filament, conditioning it to a moisture content in the range 6% to 12%, and heating it for at least 4 hours within the temperature range 140° to 180°C. without permitting any substantial variation either in its degree of stretch or in its moisture content. TTD: 11-48

Synthetic fibre industry. Japanese synthetic fibre industry. Takeo Takagi. *Rayon Textile Monthly 29*, 55-7 (July, 1948).

In addition to a discussion of the Japanese synthetic fiber industry, recent developments in fibers and fiber processing are discussed briefly. TTD: 11-48

Vinyon. A knitter looks at Vinyon. W. A. B. Davidson. *Rayon Textile Monthly 29*, 82-3 (Apr. 1948).

The characteristics of Vinyon and problems arising in knitting and dyeing it are discussed briefly. TTD: 11-48

Vinyon. Process sequences in "Vinyon" yarn production. J. M. Swalm, Carbide & Carbon Chemicals Corp. *Rayon Textile Monthly 29*, 68-70 (July, 1948).

The various steps in the manufacture of Vinyon yarn are described briefly, and illustrated by a picture flow chart. TTD: 11-48

Vinyon N. Textile fabrication and applications of "Vinyon"N yarns. Eldon Stowell, Carbide & Carbon Chemicals Corp. *Rayon Textile Monthly 29*, 78-80 (June, 1948).

Vinyon N yarns are discussed with reference to their performance in weaving, knitting, dyeing and finishing and blending with other fibers. Various applications of Vinyon N yarns are also discussed. The property of non-support of combustion is important in connection with its uses. It is stated that the potential sales of Vinyon N yarns now exceed the production of the present yarn plant by at least 6 to 1. TTD: 11-48

Fiber applications I 5

Applying coating materials. Method of applying coating materials. Jas. S. Smyser (to Behr-Manning Corp.). USP 2 447 374, Aug. 17, 1948.

Suede-like materials may be made by applying particles and finely-divided material, such as flock, linters, etc., to a suitable backing material

treated with an adhesive on one face. It is then passed through an electrostatic field set up between one or more pairs of oppositely charged electrodes. The particles to be applied are charged so that they are repelled in the direction of the backing material by passing them through a metallic screen which is connected in the circuit of the projecting electrode. The fibers become oriented with their major axis at an angle of from about 45° to 60° with respect to the backing material. When thus charged, the particles, upon entering the electrostatic field are projected against the adhesive surface of the base more uniformly and efficiently, and with much greater force than would otherwise be possible. The rate of deposition or application may be so controlled as to produce a coated product of any desired density by varying the quantity of particles supplied, the rate of travel of the adhesive base through the field, and the electrical characteristics of the field.

LCL TTD: 11-48

Non-woven fabric. New non-woven cotton and drapery fabric. Anon. *Textile Colorist 70*, 25, 57 (Aug. 1948).

A new rayon and cotton non-woven fabric has been developed by Trimz Co., Inc., a division of United Wallpaper, Inc. The fabric is made of 100% rayon on the face and 100% cotton on the back; it has a conventional "hand" and can be cut and sewed like any other fabric. Other features of the non-woven fabric are: it will not ravel at the sides or ends, is unaffected by humidity and dampness, is sun tested and highly resistant to fading, and may be safely washed if handled with sufficient care. Manufacturing processes include bonding of several layers of carded cotton fibers, as backing, and several layers of carded rayon fibers, for surface sheen, with synthetic resins that are insoluble in water and ordinary solvents. Three new printing processes are used. At present the new fabric is available only in finished drapery form. TTD: 11-48

Rayon flock. Rayon flock—its uses and application. G. G. Turner. *Silk & Rayon 22*, 611-12 (May, 1948).

The many uses of rayon flock are described briefly and methods of application reviewed. An inexpensive method of applying rayon flock is the "Beater Bar" method which uses a straight bar of wood or metal 1-1½ in. sq. The beater bar is rotated rapidly by means of a motor or treadle and the adhesive coated object to be flocked is brought in contact with it. The vibration set up by the beating insures that each flock fiber stands

on end and "dances" its way into the adhesive. Rayon flock is being used in the Lancashire spinning trade in covering spinning frame clearer rollers, and has been found to be highly effective. TTD: 11-48

Fiber processing I 6

Wool oiling. Application of emulsion on wool. Anon. *Textile Industries 112*, 89-91, 210-11 (Oct. 1948).

A new system for applying the desired amount of emulsion to wool consists of heating the oil and water in separate tanks, forming the emulsion in a mixing chamber, and applying the emulsion to the wool conveyor apron by spray nozzles. Making of the emulsion and its application on the raw wool is regulated by needle valve controls, orifice meters, and manometers. A nomograph for operation of the wool oiler is given. TTD: 11-48

INORGANIC FIBERS II

Glass fibers. Method and apparatus for making fine glass fibers. Games Slayter & Ed Fletcher (to Owens-Corning Fiberglas Corp.). USP 2 450 363, Sept. 28, 1948.

By means of the present invention, it is claimed that glass fibers can be made with diameters as small as .00004 to .00010 of an inch, or approximately one to 2½ microns. The glass beads or other form are fed to the machine through a trough, the lower portion of which is heated in order to melt the glass. The molten glass flows from orifices into small streams. These streams of molten glass are attenuated to form filaments by means of co-acting blowers. The velocity of gases emitting from the blowers and the temperature of these gases are adjustable so that the attenuated streams solidify a short distance below the orifices of the feeder. Just as the glass streams begin to solidify, a secondary gaseous blast melts or softens the filaments as they are fed into it. These gases move at a high rate to attenuate the molten or softened filaments to fine fibers. The first molten fibers move downward vertically where the last of secondary attenuation moves generally horizontally. The high velocity of the secondary blast is preferably obtained by burning a combustible gaseous mixture which will expand at a high velocity through an orifice. The attenuated fibers are collected on a perforated continuous blanket a short distance from the secondary blast. A suction chamber is placed behind the perforated conveyor belt. Variations in the size of the fibers formed by the secondary blast may be made by

varying the size of the primary filaments, maintaining the rate of attenuation constant and feed constant or by varying the rates of feed. Variations in temperature of the molten glass, and size of the orifices in the feeder may also change the size of the final filaments.
LCL TTD: 11-48

FIBER TO YARN III

Worsted yarn system. New worsted yarn system at Wright Spinning Co. Anon. *Textile Industries 112,* 149, 151, 153, 155 (Oct. 1948).

The Saco-Lowell system for worsted yarn manufacture consists of a modified cotton lap winder with a special creel for the top, breaker and finisher drawing frames, a single roving frame equipped with a new ball creel, and a standard Saco-Lowell spinning frame. Details of the equipment, including roll coverings, drives, etc., are described. TTD: 11-48

Fiber preparation III 1

Card clothing. Respect your card clothing. Geo. T. Hunt. *Textile Industries 112,* 123-6 (Sept. 1948).

It is of utmost importance to have well-kept clothing on the cylinder, flats, and doffer of the card. The number of the card fillet, the clothing foundation construction, the correct clothing of the card, including conditioning the fillet and wire tension, setting the stripping roll, and care of the grinding equipment are reviewed as essentials in good card clothing. TTD: 11-48

Card feed roll. Card feed roll. Henry M. Bacon (to The Dayton Rubber Co.). USP 2 442 333, June 1, 1948.

This patent describes a feed roll for a cotton card consisting of a roll with a resilient cover of rubber on rubber-like materials. The shaft of the feed roll is mounted in frames between springs which can be adjusted to vary the pressure of the roll on the picker lap.
JED TTD: 11-48

Combs. Means for manufacturing combs for comber machines. Joseph P. Curry. USP 2 446 079, July 27, 1948.

The present invention relates to a novel and improved means for expeditiously and economically manufacturing so-called "half-laps" or special metal combs for complemental use in parallelizing fibers in comber machines such as are employed in the textile industry to comb and straighten various kinds of fibers. Secondly, the invention has to do with a special steel needle assembling, aligning, spacing and clamping vise which permits said needles to be adequately and satisfactorily soldered to the back or body of said comb in a manner to function as teeth. In carrying out the principles of the invention, a reciprocatory shaking table is utilized, this having an inclined needle assembling and drifting trough at the needle discharge end, the needles being delivered by forces of gravity and agitation into pockets provided therefor in a special twin-block vise, the blocks being so constructed so as to expeditiously locate, uniformly space, and orderly clamp and position the needles so that protruding shank portions thereof may be secured to the back of the comb and the comb quickly made up and finished for use. TTD: 11-48

Drafting. Fiber movement in drafting. B. R. Cox. *J. Textile Inst. 39,* P230-40 (July, 1948).

The author derives equations to determine the drafting force and the frictional forces in fibers during the drafting operation. It is pointed out that, in roller drafting, there is a pronounced tendency to form a drafting wave in drafting at constant roller speed, while no such tendency is present when drafting at constant force.
HAM TTD: 11-48

Drafting collector. Collector for textile drafting mechanisms. Jos. Noguera (to Casablancas High Draft Co., Ltd.). USP 2 450 251, Sept. 28, 1948.

This invention relates to condensers or reducing devices for drafting mechanisms for textile fibers. Up to the present, the known devices consisted essentially of a prismatic member supported on one face upon a drafting roller and having a funnel-shaped trough through which the fibers pass, the member acting as a collector. In practice, it was found that, when the material being drafted is in a very open state, as it usually is in compound drafting machinasms, the collector may become unthreaded during use, that is to say, the material may come out of the funnel-shaped passage and thereafter travel forward by the side of the collector instead of through it. It is practically impossible to observe this unthreading of the material since it is too rapid and too infrequent, and the solution of the difficulty provided by the present invention is based upon the following theory as to how the unthreading occurs. The supporting face of the known collector is curved to conform to the curvature of the roller upon which it rests, and a nip is thus formed between the lower edge of said face and the fluted adjacent surface of the roller. The tips of stray fibers are

sufficiently interlaced with the others in the strand, the whole strand is pulled down and forced to pass under the collector. Immediately when this happens, the strand pushes the collector out of the way and subsequently proceeds in the unthreaded position. According to the invention, this drawback is overcome by forming the face of the collector that may be arranged to be adjacent the associated drafting rollers, with a recess which extends from the inlet side of said face, whereby a clearance is afforded between the face of the collector and the adjacent surface of the roller with which is it associated.

TTD: 11-48

New opening room. Avondale gears for the future. Anon. *Textile Industries, 112,* 126, 129 (Feb. 1948).

More efficient opening equipment and an improved opening room set-up are features of a new installation at the Pell City (Ala.) plant of Avondale Mills. The old system delivered 1450 lbs. per hour at 100%; the new installation delivers 2130 lbs. per hour at 100%. Details of the new opening room set-up are given. The system is automatically controlled. TTD: 11-48

Roll clearer. Spring type clearer for bottom rolls. Anon. *Textile Industries, 112,* 113 (Oct. 1948).

Lap-ups are eliminated and production is increased on drawing frames as a result of a new type clearer for the bottom rolls. The clearer is kept in contact with the rolls by springs that maintain an even pressure and which are strong enough to cause all waste to be picked up by the felt surface of the clearer cloth. Cleaning of the clearer is an easy operation. TTD: 11-48

Vertical opener. New vertical opener by Saco-Lowell Shops. Anon. *Textile Industries 112,* 191 (Oct. 1948).

An illustrated description is given of a new Model S vertical opener which consists of 4 basic assemblies: the cylindrical housing, the beater, adjustable grids, and the drive. TTD: 11-48

WOOLEN MACHINERY—English, Scotch and American carding systems. Platt Bros. (Sales) Ltd. pp. 110.

Reviewed in *Silk & Rayon 22,* 710 (May, 1948). TTD: 11-48

Blends III 2

Nylon-worsted. B. N. S. [British Nylon Spinners, Ltd.] offer new nylon/worsted process to the trade. Anon. *Silk & Rayon 22,* 326, 328 (Mar. 1948).

The use of nylon as an assistant in the production of lighter and stronger wool textiles is discussed. The core system is favored over the doubling system as the means of incorporating the nylon into the woolen yarn. Comparative test data for all worsted and worsted-nylon fabrics of similar characteristics are given in a table. TTD: 11-48

Spinning III 3

Drawing-spinning rayon. Spinning rayon on cotton system. Anon. *Am. Wool Cotton Reptr. 62,* 13-14, 53, 55, 57 (Oct. 14, 1948).

The processing of rayon staple on the cotton system is discussed with details of drawing frame settings, the 5 types of fly frames which can be used to handle rayon staple, twist multiples, proper tensioning, the conventional and long-draft frames for spinning rayon staple, etc.

TTD: 11-48

Flyer block. Nylon flyer block. Anon. *Textile Age 12,* 108, 110 (Sept. 1948).

A new nylon flyer block, used in twisting yarn and guiding yarn under tension so that it will not tangle, eliminates the need for lubrication in operating speeds as high as 15,000 rpm.

TTD: 11-48

High tenacity rayon. The use of high tenacity rayon in increasing the spinning productivity of staple fibres. A. Johnson. *J. Textile Inst. 39,* P309-17 (July, 1948).

The author discusses combinations of nylon and wool for the production of "core" yarn fabric, and emphasizes the use of such yarns for the production of light-weight, tightly woven shirtings and fine gage socks. It is suggested that extra long rayon yarn might be used for the same purpose. HAM TTD: 11-48

Holder for bobbins. Bobbin holder. John P. Garey (to Bendix Aviation Corp.). USP 2 445 849, July 27, 1948.

This invention relates to holders for pendulously supporting bobbins from the creels of spinning frames and the like and relates more particularly to an anti-friction type of bobbin holder. In bobbin holders of this type, it has been found that the bearing may become fouled by lint when used under certain conditions, such as in the presence of an air blast type cleaner for the creelboards of spinning frames. Moreover, it is difficult to construct bobbin holders as now designed so that they will function well for all sizes of bobbins. The present invention provides a novel bobbin holder which is simple and economical to manufacture

and easy to service. There are 9 claims and 2 sheets of drawings. TTD: 11-48

Nomogram. [Nomogram for determining roving twist]. John Duerst, Clark Thread Co. *Textile Industries 112,* 88-9 (Mar. 1948).

A graph is given for determining roving twist, and specimen problems are illustrated.

TTD: 11-48

Non-sloughing cam. Non-sloughing cam for wool frame. Anon. *Textile Industries 112,* 130 (Sept. 1948).

The use of a cam on Model E wool spinning frames that increases the traverse of the ring frames from 3⅞" to approximately 4⅜" is reported to reduce to a minimum the amount of yarn sloughing-off the bobbins in the warper creel. Increased production on the warpers is claimed.

TTD: 11-48

Pulleys. Anti-friction tape tension pulleys. Anon. *Textile Age 12,* 117 (Sept. 1948).

A new type anti-friction tape tension pulley which can be mounted on all types of spinning frames without special brackets is briefly noted.

TTD: 11-48

Ring holder. Adjustable ring holder for spinning machines. Leroy S. Peachey and Raymond P. Knull. USP 2 445 966, July 27, 1948.

The present invention relates to new and useful improvements in spinners for silk throwing and pertains particularly to a ring holder for a conventional machine of the combined doubling and spinning frame type. Objects of the invention are to provide a spinner that will double and spin and produce substantially perfect, tightly wound bobbins; to provide a spinner with an improved ring rail assembly whereby each ring is individually adjustable, vertically as well as horizontally; to provide a spinner with an adjustable ring holder which will allow for variations in the vertical setting of the individual ring as closely as desired while the machine is running. Another object is to provide an attachment for spinning machines of this character which is simple and practical in construction, efficient and reliable in operation, relatively inexpensive to manufacture, easy to install in operative position on the machine without necessitating any changes or alterations in the construction thereof. TTD: 11-48

Rings. Spinning and twisting rings. R. S. Audley. *Fibres 9,* 307-09 (Aug. 1948).

Brief discussions are given of ring sizes and types, ring hardness and lubrication, ring concentricity, wear in rings, and the care of rings. TTD: 11-48

Roller stand. Roller stand for spinning and preparing machines. Joseph Noguera (to Casablancas High Draft Co., Ltd.). USP 2 446 021, July 27, 1948.

The normal type of roller stand comprises two parts, a base which is secured to the roller beam and carries the front roller support, and a top part which is slidably supported upon an extension of the base and which carries the middle and back roller supports. To adjust the position of the various bearings of each of such stands so that they are correctly aligned on the machine entails much slow and awkward work, especially in view of the fact that adjustment is possible only in the downward direction, by removing metal. The normal type of roller stand has a further consequent disadvantage in that it is not interchangeable and cannot be mass-produced. The present invention seeks to provide a roller stand which avoids present difficulties of adjustment and which will permit the roller bearings to be raised or lowered collectively, or will permit the angle which the plane of the rollers makes with the horizontal to be varied within any reasonable range required, in an extremely simple and accurate manner. According to the invention, the roller stand is comprised of a base member adapted to be secured to a stationary part, and an upper roller supporting member which is so arranged for connection to the base member that it is capable of being held in positions of adjustment where it has been bodily approached to, or moved away from said base member, or where it has been tilted about either end, whereby the height or inclination of the plane of the rollers that may be carried by said roller supporting member, can be set as required.

TTD: 11-48

Spindle lubricants. New line of spindle lubricants. Anon. *Textile Industries 112,* 225-6 (Sept. 1948).

Lily White Oils AX, BX, and CX are a new line of spindle lubricants that will reduce bolster wear as much as two-thirds. TTD: 11-48

Spinning and winding. Apparatus for spinning and winding textile threads. Rene Jacques Henri Kovacs. USP 2 447 345, Aug. 17, 1948.

Nowadays, the spinning of textiles such as wool, cotton, and similar products is done on flyers, after which the thread is wound up on spools on winding frames. This invention has for its object a machine allowing the simultaneous execution of both spinning and winding operations. The machine has a reduced bulk, is of a very low cost, and moreover it considerably simplifies said operations. In the machine, the roving does not rotate but it is caused to twist under the action of the

rotary motion of the machine, which leads to a much more regular twist of the thread. The improved machine includes chiefly a frame adapted to rotate around a horizontal axis and carrying a device providing for the reciprocation of a slider through a line perpendicular to the axis of rotation, while a friction driving cylinder rotates around an axis parallel with the line along which the slider reciprocates, means being provided for controlling the reciprocation of the slider and for rotating the driving cylinder and a spool carrying shaft being provided which is parallel with the driving cylinder and is yieldingly urged towards it. TTD: 11-48

Spinning flax. The theory and practice of flax spinning. A. V. Pringle. *Fibres, Fabrics & Cordage 15,* 118-9, 121-3 (Apr. 1948); 158-61 (May, 1948); 184-8, 196 (June, 1948); 228-31, 235 (July, 1948); 254-5, 258 (Aug. 1948).

The processing of flax is described and discussed in a series of articles. The raw material, its cultivation and harvesting are considered, and subsequent processing including retting, scutching, carding, and spreading are discussed. (to be continued). TTD: 11-48

Spinning frame. Spinning frame and method. John T. Drennen (to Am. Viscose Corp.). USP 2 442 761, June 8, 1948.

This invention relates to spinning frames and particularly to the type used in spinning yarns on the woolen system, which comprises a pair of back restraining rolls, a pair of front drawing rolls driven at higher speed, and a twisting tube therebetween for imparting false twist to control the drafting. The principal object of the invention is to provide a modified spinning system which is capable of yielding improved results when it is necessary or desirable to employ a high degree draft or false twist, such as in the drafting of long fibers or relatively smooth-surfaced fibers. TTD: 11-48

Spinning jute. The practical jute spinner. Anon. *Fibres, Fabrics & Cordage 15,* 22-5 (Jan. 1948); 62-4 (Feb. 1948); 87-9, 96 (Mar. 1948); 126, 129-30 (Apr. 1948); 162 (May, 1948); 198-200 (June, 1948); 259-60, 262-3 (July, 1948); (to be continued).

The preparatory processes for the spinning of jute are described and discussed in these articles. The subjects discussed cover operations from opening, softening and batching through jute preparing. TTD: 11-48

Spinning worsted. American system used for fine worsteds. C. Mallard Bowden. *Textile World 98,* 130, 131, 198-204 (Oct. 1948).

The Delaine Worsted Mills of Gastonia, N. C., spins worsted and nylon staple yarn of unusual evenness and strength, on new Whitin American system machines modified by Delaine mechanics. Only longer combing wools of 64s and finer grades are processed at a minimum staple length of 2½ in., with low short-length content. The drawing frames are the heart of this system. They have four-roll, fluted steel drafting assemblies with variable pitch of the flutes, modified by Delaine. The Delaine frames have direct weighting that is variable for each line of rolls. Spring weighting is also provided. Custom-built creels permit two balls of top or two ends up rather than the single top usually found on the American system drawing frames. Conditioning emulsion for the sliver contains Syton colloidal silica. This system has also been used with success in the spinning of nylon staple fiber. Although originally designed to process 1½" and longer staple, it can handle 3" crimp staple without difficulty.
LCL TTD: 11-48

Twisting. Twisting novelty yarns. Hardin Botley. *Textile Industries 112,* 100-03 (Mar. 1948).

The production of novelty yarns requires departures from conventional practice in the twister room. Some of the precautions to be observed, and some of the methods employed in twisting novelty yarns are discussed. TTD: 11-48

Yarn-thickness variations. Composite frequencies in yarn-thickness variations (shown by an air flow method). W. L. Balls. *J. Textile Inst. 39,* T225-31 (July, 1948).

The author describes an instrument for determining variations in size of yarn. The instrument is based on variations in air pressure obtained by drawing yarn through an aperture of constant dimensions through which an air current is flowing. It was necessary to gas the yarn before testing.
HAM TTD: 11-48

Winding III 4

Automatic winder. Automatic winder. Walter Schweiter (to Machinenfabrik Schweiter A. G.). USP 2 449 328, Sept. 14, 1948.

The invention is an improvement in automatic winders which are machines that take empty bobbins from a magazine and wind them with yarn and then discharge the wound bobbin. When the yarn is severed, in order to release the wound bobbin from the machine, the cut end still remaining

in the machine has to be attached to the next-arriving empty bobbin to start the winding on it. This is done by a mechanism which lays such yarn across the face of the winding head so that it will be pinched against the end or butt of the fresh bobbin when the winding head advances to engage and rotate the bobbin. The length of yarn required for this purpose remains as a tail on the discharged bobbin and has to be torn off by hand before the bobbin goes into use. The purpose of this invention is to remove such tail in the winding machine automatically, and prior to the discharge of the bobbin, so that the latter is immediately ready for use. Such removal is accomplished while the bobbin is still in its winding position and by means of a suitable parting tool which severs the yarn between the point where it is pinched against, or otherwise attached to the bobbin; and the point where it becomes part of the wound mass on the bobbin. TTD: 11-48

Bobbin lifter. Bobbin lifter. Robt. J. Bartholomew (to Fletcher Works, Inc.). USP 2 450 074, Sept. 28, 1948.

This invention provides a bobbin lifter which may be installed on new machines, and is also capable of use with machines now operating, for stopping the rotation of the bobbin or yarn package upon a break or reduction in tension of the yarn being wound or upon the completion of winding of the yarn package. Further, the bobbin lifter is simple in construction, automatic in its operation, and does not require the use of springs, spring-held latches, or the like; power from the driving roll operating shaft of the machine on which the bobbin lifter is mounted is utilized for elevation of the yarn package. TTD: 11-48

Leveling and aligning means. Leveling and aligning means. Albert M. Guillet. USP 2 449 219, Sept. 14, 1948.

This invention relates to a leveling and aligning means for machinery, especially a machine such as a Foster winder. This invention provides special brackets, and mechanism for attaching to opposed ends of a winding machine, for supporting a reel at one end and an anchoring means at another end for stretching a wire, or other line, from the anchoring means to the reel means where proper tension can be supplied to the line. The line is used as a guide in the leveling and aligning of the entire machine. TTD: 11-48

Tensioning. Magnetic type tension for winders. Anon. *Textile Industries 112*, 225 (Sept. 1948).

A new pinch type tension device, the Magnetension, which provides the proper degree of tension to normal twist synthetic yarns in winding, is briefly described and illustrated. TTD: 11-48

Winding machine. Winding machine. Irving W. Day (to Universal Winding Co.). USP 2 450 187, Sept. 28, 1948.

This invention provides an improved winding machine for producing packages of yarn or the like with a precision wind while maintaining a uniform speed of draft of the yarn throughout the winding. The improved machine is of simple construction and arrangement, embodying a minimum number of moving parts with elimination of the usual grooved cams, reciprocating traverse-bars, and other moving elements of relatively great weight. TTD: 11-48

Yarn processing III 5

Fastening worsted yarns. Device for connecting yarn ends. John A. Waugh & Rolf Wallin (to Wauregan Mills, Inc.). USP 2 449 349, Sept. 14, 1948.

Knots in worsted cloth are objectionable because they must be pulled through from the face to the back of the fabric. Eventually the break, leaving a hole. This invention provides a means of joining 2 ends of worsted yarn without tying a knot. It could be used to great advantage in mills making sewing thread. The device is used in conjunction with an adhesive for which an application is pending. The adhesive is carried in a container (which is part of the mechanism) and is dispensed in small quantities onto the yarn. The 2 ends are overlapped ⅜", smeared with adhesive and rolled into 1 piece. The splice is strong enough to withstand the strain of warping and weaving but the adhesive is readily soluble in finishing baths. The device is small, compact, and designed to be used with one hand.
JAW TTD: 11-48

Yarn extractor. Extractor for skein yarn soaking operations. Anon. *Textile Industries 112*, 193 (Oct. 1948).

A new extractor for cake and skein yarn soaking operations improves the quality of yarn, requires less yarn handling, saves labor, and requires less floor space. TTD: 11-48

Yarn products III 6

Bobbin carrier. Bobbin carrier for braiding machines. Percival L. Hobourn & Wm. H. Joy. USP 2 448 312, Aug. 31, 1948.

This invention comprises improvements connected

with bobbin carriers or wanderers for braiding machines and provides means whereby the thread tensioning means and ratchet operating mechanism are more fully protected from damage and fluffing than has been proposed in the past.

TTD: 11-48

Braiding machines. Plastic braider bobbins. Anon. *Textile Industries 112,* 233, 235 (Sept. 1948).

Plastic bobbins that are injection molded with cellulose for use on braiding machines are briefly noted. TTD: 11-48

Nylon rope. Characteristics of nylon rope. R. P. Mears. *Fibres, Fabrics & Cordage 15,* 218-20 (July, 1948).

The advantages of nylon rope in mountain climbing are discussed. Comparative data are given in a table for dynamic loading of various kinds of rope. TTD: 11-48

Rope. The practical rope maker. Anon. *Fibres, Fabrics & Cordage 14,* 437-43 (Oct. 1947); 475-9 (Nov. 1947); 519, 521-5, 537 (Dec. 1947); *15,* 12-13, 15-19 (Jan. 1948); 51-4, 57-9 (Feb. 1948); 91-6 (Mar. 1948); 124-6 (Apr. 1948); 164-7 (May, 1948); 195-7 (June, 1948); 223-7 (July, 1948); (See *TTD: 4* 212, 442).

These articles continue the detailed discussion of rope making. Soft fiber cordage, treatment of ropes and cordage for special purposes, and packaging and winding are considered. A number of useful tables and formulas are given in the last article. TTD: 11-48

Tenite cord chain. New plastic beaded cord chain. Anon. *Textile Age 12,* 137-8 (Sept. 1948).

Beads of Tenite, a lustrous, lightweight plastic, are molded onto a rayon cord and become fused to the fibers so that they cannot slip off. These plastic beaded cord chains may be either hand woven or woven on a mechanical loom; they are also suitable for braiding, crocheting, embroidery, etc. TTD: 11-48

Thread cutter. Thread severing apparatus. Theodore Weber, Sr. & Theodore Weber, Jr. USP 2 444 079, June 29, 1948.

This invention relates to improvements in thread severing apparatus, particularly to apparatus for severing connecting threads or loops of embroidered fabric by employing circular knives as cutting elements, and means for rotating the cutting elements and pick-up elements independently, the cutting elements being rotated at a speed high enough to require no appreciable tension in the loops to sever them when they are caused to touch

the periphery of the cutting element, even though the loops be formed of heavy thread, or the cutting elements be slightly dull.

JED TTD: 11-48

Yarn applications III 7

Tubular coverings. Method of making tubular coverings. Paul F. McDermott & Harry E. Holcomb (to Johns-Manville Corp.). USP 2 445 624, July 20, 1948.

The invention relates to insulating coverings for tubes, pipes, and the like, and more particularly, to seamless tubular coverings for such purposes, and provides a method of making a tubular, seamless covering, comprising spiral windings of asbestos listing, roving, or other strand-like material, the windings being secured in continguous relationship into a unitary, integrated body by an adhesive material. The individual strands may be of any suitable type, and preferably are composed of asbestos fibers, with or without the addition of other fibers or reinforcing threads, in the form of ropes, wicking, and listings, and are of a diameter determined by the thickness desired for the walls of the covering. The number of individual strands making up the covering may be varied as desired to adjust the slope or pitch of the spirals, and thereby vary the relative longitudinal and circumferential yieldability of the covering. The adhesive which may be present either as a strand impregnant or as a coating on the assembly, preferably the later, may vary from a material which, when set or dried, is relatively unyieldable and rigid, to one which is yieldable and extensible, depending upon the particular use to which the covering is to be put. TTD: 11-48

YARN TO FABRIC IV

Fabric definitions. Definitions of fabrics. G. Creyf. *Textielwezen 3,* I.—35-9 (Aug. 1947); II.—139-44 (Sept. 1947); III.—37-43 (Oct. 1947); IV.—33-7 (Nov. 1947); IV.—49-51 (Jan. 1948); VI.—38-41 (Mar. 1948); VII.—29-32 (May, 1948); VIII.—41-2 (June, 1948); *in both Flemish and French.*

1) Modern fabrics are classified and identified in alphabetical order, beginning with this article, which carries the list through *Astrachan.* 2) Definitions are continued from Axminster through Bayadere. 3) Definitions for Bearer through Cashmire are given. 4) Textiles from Calicot to Chine are described. 5) Definitions are continued from Chirtz to Cottonnette. 6) Fabrics from Coutil through Crêpe Georgette are described and

samples of crepe de chine and Crêpe Georgette are attached to a seperate sheet. 7) The alphabetical list is continued from Crêpe Marocain to Damas. An illustration of damask fabric is included. 8) The list is continued from Dekea (Flemish for blanketing) to Domett (Dometz). A picture and diagram of diagonal cloth is included. (to be continued). TTD: 11-48

Fabric names. How many of these old names are familiar to you? Barbara Budden. *Silk & Rayon 22,* 664 (May, 1948).

A list of 35 of the most common old names of fabrics, and of what they were originally made, is given. TTD: 11-48

Yarn preparation IV 1

Drawing in warps. Warp drawing machine. Russell P. Drake (to Barber-Colman Co.). USP 2 445 999, July 27, 1948.

The invention pertains to machines for drawing in warps and has particular reference to a mechanism for controlling the positions of heddle frames of the type having heddles freely slidable endwise of the frame, so as to shift the frames endwise with respect to the reed and parallel thereto in order to permit the drawing in of a full harness. The primary object of the present invention is to effect a shifting of the heddle frames progressively during the drawing-in operation to the end that a full harness can be drawn in automatically without the intervention of the operator, and at the same time effect an even distribution of the heddles across the full length of the harness. A further object is to provide a heddle control or shifting mechanism of practical character for imparting a progressive shifting movement to the heddle frames. TTD: 11-48

Drying. New high-speed drying unit for slashers. Anon. *Rayon Textile Monthly 29,* 68, 69 (Apr. 1948).

A description is given of a new high-speed drying unit for slashers in which the yarn is dried with heated air currents at low velocities. A new wet splitting device is described with the specifications for the slasher are given. The production is 1000 lbs. per hour. A wide range of yarns including 100% cotton, 100% worsted, rayon and blends of all 3 have been successfully processed.

TTD: 11-48

Nylon yarns. The properties of nylon and its processing preparatory to weaving. F. Millard. *J. Textile Inst. 39,* P27-34 (Jan. 1948).

The author discusses the preparation of nylon

yarns for the weaving operation, the use of nylon yarn in weaving, and the physical properties of nylon yarn. (See TTD: *5,* 576).

HAM TTD: 11-48

Sizing. Cotton warp sizing. Paul V. Seydel. *Textile Industries 112,* 115, 117, 119, 121, 123, 125, 127 (Jan. 1948); 132, 135, 137 (Mar. 1948); 137-9 (Apr. 1948).

The 13th article in this series covers factors affecting weavability determination of effectiveness of the size, warp defects, causes and remedies for variation in size films, suggestions for elimination of oil stains, mildew, and rust spots. The 14th and 15th articles discuss slasher room equipment. (to be continued.) TTD: 11-48

Sizing. The sizing of spun yarns. R. P. Morningstar. *Rayon Textile Monthly 29,* 54-6 (Feb. 1948).

The difficulties connected with the sizing of synthetic spun yarns are discussed. Particular attention is called to the fact that the squeeze rolls in the slasher should weigh from 650 to 750 lbs. Proper temperature control is necessary and the drying temperatures of the drying cylinders should not only be controlled, but the temperature in the first 2 cylinders should be only slightly higher than that of the yarn as it emerges from the size box. If the size box temperature is 140° to 150°F, the first 2 rolls should have temperatures of 160°F.

HAM TTD: 11-48

Sizing. The sizing of yarn dyed warps. J. J. Sussmuth. *Rayon Textile Monthly 29,* 48 (May, 1948).

Considerations involved in the sizing of dyed rayon warp yarns are discussed briefly and suggestions given for successful operation of the process. As a general rule, the usual formula and methods of sizing warps for taffetas should be used. TTD: 11-48

Sizing composition. Sized organic derivative of cellulose yarn. Ralph H. Balch & Irma G. McCormick (to Celanese Corp. of Am.). USP 2 448 571, Sept. 7, 1948.

Difficulties in softening or plasticizing casein as a size for cellulose acetate and similar yarn is claimed to be overcome by incorporating in the casein a nitrogenous base such as alklolamine and an organic ester of phosphoric acid. The alkylolamine used may be triethyanolamine or similar amines and the organic ester of phosphoric acid may be triethyl phosphate or similar materials. The recommended sizing compositions are made up of 75-85% by weight of casein, 15-20% by

weight of the amine and 3.5-6% by weight of the organic phosphoric ester. The mixture is dispersed in water.
LCL TTD: 11-48

Sizing nylon. Pointers on sizing nylon. Earl Roberts. *Textile Industries 112,* 193, 195 (Sept. 1948).

Suggestions for better sizing of nylon knitting yarns are presented. TTD: 11-48

Slashing. Mills say slasher lubricator unit reduces warp and filling stops. Anon. *Textile Industries 112,* 92-5 (Mar. 1948).

A new, patented process for the sizing of cotton and staple synthetic fibers applies fats or lubricants separately from the starch mix and immediately following the starch application. Both size and lubricant are applied in one continuous operation. It is believed that the shuttle being lubricated at all times accounts for the reduction in filling breaks. Other parts of the loom coming in contact with the warp are similarly lubricated. The system and the results achieved in actual mill tests are described briefly. TTD: 11-48

Warp twisting-in machine. Warp twisting-in machine technique. H. E. Wenrich. *Rayon Textile Monthly 29,* 70-2 (Apr. 1948).

Features of the Sipp-Eastwood warp twisting-in machine are described briefly and operating techniques are discussed. TTD: 11-48

Weaving IV 2

Defects. On grading the grey. Arthur Kahn, Arthur Kahn Co., Inc. *Textile Colorist 70,* 30-1 (July, 1948).

The widely varying practices in inspecting cloth are discussed with reference to the subsequent difficulties experienced by finishers and cutters. It is recommended that weavers and converters establish a dividing-line between firsts and seconds in weaving, and that converters and cutters decide on the leeway for finishing blemishes.
TTD: 11-48

Statistical data. Advantage of statistical data on weaving performance and quality. Otto Bitzenhofer. *Rayon Textile Monthly 29,* 61, 62 (Jan. 1948); 65-6 (Feb. 1948); 52-4 (Apr. 1948).

Silk and rayon mills may improve their weaving production through the accumulation of statistical data concerning loom performance and the use of these data in a series of charts devised by the author. TTD: 11-48

THE ART OF LOOM TURNING. 2nd ed. J. W. Hutchinson. Pub. by the author, 12, Bromet Place, Eccleshill, Bradford, Yorks. pp. 600; price: 26/.

Reviewed in *Silk & Rayon 22,* 710 (May, 1948).
TTD: 11-48

Looms IV 2 a

Circular loom. New French circular loom used on rayon. H. R. Mauersberger. *Rayon & Synthetic Textiles 29,* 81-2 (Sept. 1948).

The operation of the new Fayolle-Ancet circular weaving loom is briefly described, and its advantages and disadvantages are noted.
HAM TTD: 11-48

Comb and reed. Comb and reed for textile machines. Frank H. Kaufmann (to Steel Heddle Manufacturing Co.). USP 2 447 342, Aug. 17, 1948.

Heretofore, in the construction of combs or reeds in which the dents are spaced in the convolutions of coil springs, one of the principal difficulties has been to insure the proper disposition of the solder in the interstices in and around the ends of the dents and in and around the coil springs employed, without at the same time having the solder extend into the spaces between the dents where it is not desired. Frequently, in the endeavor to prevent the solder from extending into the spaces between the dents, the spring would be left uncovered at certain points, with the result that, in the use of the comb or reed, the warp would become caught or jammed with respect to the coils of the spring. The principal object of the present invention is to provide a comb or reed of the soldered type in which fouling of the warp and weft threads with respect to the coils of the spring will be effectively prevented, particularly at such places along the spring where the springs are not entirely covered or fill in by the solder. A further object of the invention is to provide a comb or reed of the soldered type in which the various parts may be more readily and quickly assembled, and in which uniformity of the spacing of the dents will be assured. TTD: 11-48

Dobby jacks. Wear resistant bearings for dobby jacks. Jos. D. Cash, Jr. *Textile Industries 112,* 179, 181 (Sept. 1948).

An illustrated description of a friction-resistant, adjustable, dust-proof bearing arrangement for dobby jacks on dobby head looms. Precision shedding to the warp as a result of using these bearings is reported. TTD: 11-48

Gauze weaving. Needle frame for gauze weaving

looms. Maurus Banyai (to M. Banyai, Ltd.). USP 2 449 100, Sept. 14, 1948.

Needle frames used in gauze weaving looms are liable to produce defects in the fabric if the thickness of the warp yarn exceeds the normal thickness of the warp yarn used in the production of gauze, because the doup needles cannot bear closely against the dents of the frame due to the excessive thickness of the yarn therebetween. According to the present invention, the eyelets in the free end portions of the doup needles are located exteriorly of the plane of the dents, i.e., spaced forwardly thereof, so that the elasticity of the yarn permits the free ends of the needles to bear against the dents. The free ends of the needles are therefore formed with forward bends and the eyelets are located at the bends of the needles so as to be in a line front of the dents.

TTD: 11-48

Heddle frame. Heddle frame. Russell P. Drake (to Barber-Colman Co.). USP 2 445 107, July 13, 1948.

This invention provides for the mounting of the heddle supporting bars in the frame in such a way as to permit shifting of one or more ends of the bars laterally relative to the frame, thereby exposing the ends of the bars for the removal and replacement of the heddles. It also provides means to hold the bars firmly in their laterally shifted positions so as to free the hands of the operator in threading heddles onto the bars or in removing them from the bars.

JED TTD: 11-48

Heddle frame. Heddle frame. Russell P. Drake (to Barber-Colman Co.). USP 2 445 108, July 13, 1948.

This invention provides a novel and advantageous mounting for the bars upon which heddles are supported in the frame, permitting easy removal of the bars from the frame and presenting no obstruction to the movement of the heddles along the bar. Moreover, the construction is such as to permit lateral deflection of the ends of the bars, whereby the heddles may be removed from the bars, and to permit easy removal of the bars from the frame with or without the heddles.

JED TTD: 11-48

Heddle release. Heddle release mechanism. Burt A. Peterson (to Barber-Colman Co.). USP 2 447 274, Aug. 17, 1948.

The present invention relates to mechanisms for releasing, one by one, a series of heddles from a pack, such mechanisms being suited for use in warp drawing machines, heddle counting machines, or any other machine where such successive release of heddles is required. The general aim of the present invention is to afford a heddle release mechanism which does not require a special keyhole in the heddles to accommodate them for release. On the contrary, release mechanisms of the present invention are adapted for use with heddles having only a simple slot or thread eye in them and no additional keyhole. A more specific object is to provide in a heddle release mechanism having a release key operative upon the foremost heddle of a pack to hold it releasably against separation therefrom and means for relieving such heddle of wear incident to the movement of the release key from holding to releasing position. The device and its operation are described with the aid of drawings. TTD: 11-48

Hydraulic shuttle check. Hydraulic shuttle check. Anon. *Textile Industries 112,* 110 (Mar. 1948).

The operation of a patented hydraulic shuttle check is described and illustrated. The attachment, which acts as a buffer for the shuttle, is intended to increase loom speed. TTD: 11-48

Hydraulic shuttle check. A hydraulic shock absorber for looms. Anon. *Textielwezen 4,* 119, 121 (Sept. 1948); *in French.*

A Swiss manufacturer has applied the hydraulic shock absorber to brake the shuttle at the end of its flight and to damp the motion of the sword on looms driven from below. The advantage of these applications are discussed. It is concluded that the principle is sound and that its application represents real technical progress.

TTD: 11-48

Kellog loom. New loom features unit system. Staff prepared. *Textile Industries 112,* 102-04 (Apr. 1948).

Features of the new Kellog loom are described and the more important motions are discussed.

TTD: 11-48

Loom. Loom. Robt. E. Walliser (to Libertyville Textiles, Inc.). USP 2 448 929, Sept. 7, 1948.

This invention relates to a loom for weaving fabric and rugs with projecting loops of thread extending from the surface thereof, and provides a mechanism for forming a woven fabric from pile warp and ground warp threads with weft threads woven therebetween, wherein the pile warp threads are periodically projected from the fabric in the form of loops integrally secured to but extending from the fabric. It provides means for projecting loops in a portion of the warp threads, the loops extending from the woven fabric; a

needle is arranged to engage the pile warp threads, to advance the same to form loops therein, and thereafter to release the threads. Further a shuttle mechanism is provided for periodically weaving a weft thread between warp threads, and for interrupting the operation of the shuttle mechanism for a single period. The shuttle mechanism is arranged in cooperation with the loop projecting means whereby the operation of the shuttle mechanism is interrupted when the pile warp threads are engaged for the formation of loops, and the operation is resumed before the pile warp threads are released. A tension device is provided for exerting a tension upon the pile warp threads, and for releasing the tension when the pile warp threads are engaged by a loop projecting member. TTD: 11-48

Loom-beam barrel. A new aluminum loom-beam barrel. H. H. Nuernberger. *Rayon Textile Monthly 29,* 54 (Mar. 1948).

A new aluminum loom-beam barrel to replace the customary wooden barrel is described. The aluminum barrel is about 10 lbs. lighter than a wood barrel of the same size and about 25% less expensive.
HAM TTD: 11-48

Loom drive. Driving means for looms. Wm. H. Bahan. USP 2 449 157, Sept. 14, 1948.

A combination of mechanisms is described for driving a loom by means of a motor mounted on the outside of the frame. The motor is connected to an idler shaft which drives the crankshaft of the loom. There is a geared connection between the crank shaft and the cam shaft and an improved clutch mounted on the cam shaft. This is connected to the shipper lever to provide means for stopping the loom. TTD: 11-48

Loom harness. Loom harness. John Jacob Kaufmann (to Steel Heddle Mfg. Co.). USP 2 445 070, July 13, 1948.

This invention relates to loom harness, and more particularly to the means for supporting the heddle bars in the frames. The present invention relates to a so-called "hook" member of the type which is mounted in the top and bottom rails of the heddle frames at various locations along the length thereof to support the heddle bars and to hold the same against flexing when subjected to strain during the operation of the loom.
JED TTD: 11-48

Loom harness. Loom harness. John Jacob Kaufmann (to Steel Heddle Mfg. Co.). USP 2 450 241, Sept. 28, 1948.

The present invention provides heddles of an

improved form whereby their tendency to bunch together on their supporting rods will be eliminated, and provides heddles of an improved form that will tend to space themselves on the supporting rods, and which are particularly adaptable for use in installations in which the entering is done by automatic drawing-in machines.
TTD: 11-48

Loom motors. Loom motors require "break step" operation. Anon. *Textile Industries 112,* 115 (Oct. 1948).

Equipment for running loom motors exactly 180° out of phase consists of 4 limit switches, 2 single-pole magnetic relays, and a mechanical cam arrangement. Out of phase control reduces maintenance and damage caused by vibration.
TTD: 11-48

Loom study. Loom study by means of the cathode ray oscillograph. I. Variations in individual warp-thread tension during the weaving cycle. N. H. Chamberlain & D. C. Snowden. *J. Textile Inst. 39,* T23-43 (Feb. 1948).

This is a highly technical description of the apparatus used and the results obtained. It is shown that the tensions in yarns when looms are running at weaving speed are quite different from tensions with the mechanisms at rest or in slow movement. A study such as reported upon here would appear fundamental to any attempt to improve the weaving performance of looms.
HAM TTD: 11-48

Lug strap. Lug strap. J. Edgar Moe (to Jacobs Rubber Products, Inc.). USP 2 445 744, July 20, 1948.

This invention relates to lug straps for use to actuate the picker sticks in looms and includes a novel method of manufacturing the same. The invention provides a lug strap construction which will have a limited but desired resiliency both lengthwise and widthwise, together with wear-resisting elements, particularly at the forward end of the arm where the bolt attachments to the power-actuating means is effected, as well as to the bottom or rear portion of the U-shaped construction of a standard type of lug strap. The invention provides an interlocked set of side arms and a reinforced metal backing element around the U-shaped portion of the lug strap, together with an intermediate layer, or layers, of resilient material, vulcanized or otherwise interlocked with the metal side arms and U-shaped portions, the resilient element being thus reinforced and co-operating with the metallic or non-resilient portions wherein each is constructed, arranged and

cooperating to perform a most desirable combination. TTD: 11-48

Picking cam. Picking cam and mounting therefor. Benjamin W. Brouwer & Victor F. Sepavich (to Crompton & Knowles Loom Works). USP 2 447 795, Aug. 24, 1948.

This invention relates to improvements in picking mechanisms for looms and provides an improved picking cam and mounting therefor for the purpose of making the cam operate more smoothly when force is applied thereto by an actuator. The picking mechanism for some looms includes a rockable shaft carrying a picker cam the working surface of which lies in the path of a rotating actuator or picking roll. The shaft carries a picking arm which is connected by a sweep stick to the picker stick and rocking of the shaft causes the picker arm to operate the picker stick. As made heretofore, the shafts have been so mounted that they bend somewhat at the beginning of the picking operation with the result that the first part of the movement of the picking roll along the cam is ineffective to move the picker stick. The invention provides a picking cam so made that it can accommodate a bearing for the picking shaft and prevent bending of the shaft incident to engagement of the picking roll with the picking cam. The entire time during which the picking roll engages the cam is therefore available for acceleration of the shuttle. TTD: 11-48

Pinning shuttle spurs. Method for pinning loose shuttle spurs. H. E. Wenrich. *Textile Industries 112*, 147, 149 (Feb. 1948).

A method for pinning loose shuttle spurs is described and illustrated. TTD: 11-48

Plastic bobbin. Plastic bobbin. Paul B. Wilson (to Harold D. Wolgamot). USP 2 448 242, Aug. 31, 1948.

This invention relates to a bobbin, quill, or cop for textile machinery and more especially to a bobbin made of plastic material such as "Tenite" which is cellulose aceto-butyrate. In wooden bobbins having the 3 rings clamped therearound which are employed for enabling the bobbin to be held in a shuttle in an automatic loom, when the base of the bobbin cracks due to the fact that the bobbin is forced down over the tapering spindle in a spinning frame, the centrifugal force of the spindle, running from 15 to 20,000 rpm in the spinning frame, will cause the base to spread, thereby losing friction, and it will not turn at the required number of revolutions per minute, with the result that the yarn will not receive the required number of twists per inch. In this plastic

bobbin, the solid metallic band which is disposed around the base of the bobbin has 3 circular projections thereon to take the place of the conventional wire rings clamped around the base of the wooden bobbin and, thus, prevents any expansion of the bobbin base. Further, this metallic band being around the base of the bobbin and the plastic material being molded to the band, thus embedding the band in the periphery of the bobbin base, renders the band and its circular projections thereon incapable of shifting its position relative to the base, and therefore the bobbin will always align itself when projected into the shuttle so that the tip of the bobbin will be at the same point relative to the eye of the shuttle at all times. TTD: 11-48

Plastic resin wood. Plastic resin wood for strong shuttles and picking sticks. Anon. *Silk & Rayon 22*, 560 (Apr. 1948).

The features of Hydulignum, a laminated densified wood introduced 4 years ago, are reviewed. Originally developed for the aircraft industry, Hydulignum is used for the manufacture of shuttles, picker sticks, and other textile items which are virtually unbreakable. It can be made to the desired specifications of strength and resilience for a particular item. Briefly, Hydulignum is made of selected hardwood veneers consolidated into a homogeneous block by use of synthetic resin and compression under heat. TTD: 11-48

Thread cutter. Pull-off and clamp for thread cutters. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 446 444, Aug. 3, 1948.

This invention relates to improvements in a thread cutting mechanism for looms and it is the general object of the invention to provide an improved form of clamp for the thread. The invention provides an auxiliary clamp which also acts as a pull-off to draw an additional amount of yarn from the bobbin prior to cutting. The effect of the auxiliary clamp is to hold an increased length of thread so that even though the thread should slip somewhat when the cutter mechanism is returning to its normal position, some part of the thread will nevertheless remain clamped. The invention further provides improved means by which force may be exerted through the auxiliary clamp against the moving cutter jaw or blade to hold the latter tightly against the stationary blade. This feature of the invention includes a small bushing or sleeve which not only transmits spring pressure to the moving cutter blade, but also serves as a pivot for the auxiliary clamp. TTD: 11-48

Reeding. Applying reeds with a minimum of error. H. E. Wenrich. *Rayon Textile Monthly 29*, 62-4 (Mar. 1948).

The author discusses and gives directions for proper reeding of rayon yarns, with particular reference to methods of preventing reeding errors.
HAM TTD: 11-48

Sectional weaving loom. Sectional weaving loom. Pierre G. E. A. Vanlaer. USP 2 448 935, Sept. 7, 1948.

This invention relates to a weaving loom for the simultaneous and independent weaving of several vertical warps disposed tangentially to a central roto driven by a vertical shaft, the shifting of the warp yarns being operated by means of rows of cams set on the rotor, the weft yarns being conveyed, pick by pick, between the warp yarns by travellers shot through the shed by the centrifugal effect of horizontal impeller plates revolving at high speed. TTD: 11-48

Shuttleless loom. New shuttleless loom. Anon. *Rayon Textile Monthly 29*, 43 (July, 1948).

A description and illustration of a new Warner & Swasey-Sulzer loom are given. The new loom operates at a speed of 210-240 picks per minute. Production models are anticipated before the end of the year.
HAM TTD: 11-48

Stirrup for jack stick. Stirrup for jack sticks in looms. Clarence E. Kennett. USP 2 450 198, Sept. 28, 1948.

This invention provides a jack stick having a stirrup, the side portions of which are far enough apart to cover the range of the width of the treadles and with the lower ends of the stirrup having a rod extending thereacross with a collar adjustably mounted on the rod so that one jack stick can serve for use in connection with any one of the different treadles in a loom merely by adjusting the collar theron at the proper position to correspond to the particular treadle and its jack strap with which it is to work. The jack stick has a stirrup, much broader than the conventional stirrup, with a collar adjustably mounted for lateral movement and adapted to be adjusted in a fixed position to receive a jack strap from a particular treadle in a loom. TTD: 11-48

Sweepstick. Sweepstick. J. Edgar Moe (to Jacobs Rubber Products, Inc.). USP 2 445 745, July 20, 1948.

This invention is a new and improved sweepstick for use in looms, and provides one or more lengthwise extending strips of metal, wood, plastic, or

the like, which are relatively rigid and constitute strengthening or reinforcing members, to which the end bolts are attached, and which members are arranged in overlapped or interlocked relation substantially throughout the greater portion of their length, but spaced slightly from each other, and with the resilient shock-absorbing element filling such spaces and being bonded or welded to the relatively rigid strips. The resilient spacing and bonding element may be of rubber, synthetic plastic, or other resilient and yielding shock-absorbing material which can be advantageously bonded, vulcanized, or secured directly to the surface of the adjacent portions of the reinforcing members. Thus, the reinforcing or rigid members carrying the fastenings at each end of the sweepstick and the intermediate resilient elements cooperate to insure wear-resistance at the fastenings, and resilience intermediate the fastenings.
JED TTD: 11-48

Thread separator. Thread separator for weft replenishing looms. Richard G. Turner (to Crompton & Knowles). USP 2 447 291, Aug. 17, 1948.

When a pneumatic thread holder is used with a magazine having several stacks of bobbins wound with coarse yarn, difficulty is sometimes experienced in getting the weft ends into the intake mouth due to the fact that the yarns cling together. This condition exists not only at the intake mouth, but also in the several groups of threads leading from the magazine to the holder. The present invention provides the magazine with a thread separator which will hold the weft ends of the several stacks of bobbins in separated relation, thereby preventing entanglement of the several groups of threads. The intake mouth of the thread holder is of such shape that the groups of weft ends leading from the separators will enter the mouth at different points, thereby avoiding interference of the threads of each group with respect to the threads of the other groups. This object of the invention is effected by the use of some such means as a baffle plate within the thread holder toward which all the weft ends converge, the baffle being spaced far enough from the intake mouth beyond the magazine to permit the groups of weft ends to occupy their own zones along the length of the intake mouth. TTD: 11-48

Truck. Loom battery filling truck. Ernest J. Eaddy. USP 2 448 300, Aug. 31, 1948.

This invention provides a wheeled truck which is designed for carrying the filling used in replenishing the batteries of looms, the truck be-

ing constructed so that the height of the basket or carrier may be vertically and angularly adjusted to the most convenient height for the person using it. TTD: 11-48

Tuft cutting mechanism. Tuft cutting mechanism for Axminster Looms. Walter Y. Robb (to Crompton & Knowles Loom Works). USP 2 448 829, Sept. 7, 1948.

This invention relates to improvements in Axminster looms and it is the object of the invention to improve the tuft cutting mechanism in such manner as to insure continuity of engagement between the 2 cutting blades throughout the tuft cutting operation. In a form of Axminster loom which has gone into extended use in recent years, the front knife passes under the back knife and has the effect of lifting and vibrating the latter. The front knife is supported by a bar which can be made relatively heavy, but the proportions of the loom are such that it is difficult to make the bar for the back knife of a weight equal to that of the front bar, and it is for this reason that the back knife vibrates. The present invention provides a series of vibration arresting arms arranged across the loom and so located as to engage the back bar at a plurality of spaced points and prevent it from moving upwardly when the front blade moves under the back blade. These arms are preferably mounted in such manner that they can be adjusted vertically to compensate for any irregularities which may exist in the back knife bar. They are also preferably resilient and so made as to offer increasing resistance to upward movement of the back bar as the cutting operation progresses. TTD: 11-48

Warp beam support. Support for warp beams in looms. Carl P. Bergstrom (to Crompton & Knowles Loom Works). USP 2 447 227, August 17, 1948.

It is the general object of the invention to provide a beam support which will permit the use of warp beams of various diameters and to provide a support which can be detachably held in fixed position to support the beam, but released so that it can swing out of the path of the beam when the latter is removed from the loom. A further object of the invention is to provide a support having a permanent pivotal connection with the loom frame and having a detachable positioning mechanism spaced from the pivotal connection and so located as to place the support in correct position for holding beams of different sizes. In this latter connection, detachable bolts or the like may be employed to hold the support

normally rigidly against the loom frame but removable when the positioning mechanism is removed to permit the support to swing to in operative position. TTD: 1148

Warp mounting in looms. Warp mounting in looms varies. H. E. Wenrich. *Rayon Textile Monthly 29*, 57-9 (July, 1948).

The different methods of handling and mounting warps in looms are discussed and the importance of proper installation is stressed. TTD: 11-48

Control devices — IV 2 b

Bobbin chute. Bobbin chute for looms. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 443 876, June 22, 1948.

This invention relates to improvements in bobbin chutes for weft replenishing looms and provides a chute so constructed as to cause the butt of an expelled bobbin to move forwardly at a greater rate than that of the bobbin tip. The bobbin chute has a forwardly concave surface for the bobbin butt and another surface for the bobbin tip; the surfaces are so related that, at the instant the bobbin leaves the bobbin chute, its butt is moving in a direction having a forward component greater than the forward component of the tip. TTD: 11-48

Bobbin feed. Uniform bobbin feed for picks and pick looms. Elliott A. Santon. (to Crompton & Knowles Loom Worns). USP 2 443 013, June 8, 1948.

This invention provides the loom with a multi-stack magazine controlled in such manner that it will deliver bobbins according to a predetermined sequence relatively to the stacks for successive replenishing operations of the loom, thereby permitting full use of the bobbin storage capacity of the magazine. The usual multi-stack stationary reserve bobbin magazine includes in its construction a shaft which is rocked from normal to transfer position when the magazine is set for a replenishing operation. The present invention causes the shuttle boxes to give regularly recurring but normally idle working strokes to the feed pawl for the ratchet wheel, and moves the pawl into operative position relative to the ratchet wheel on transferring beats of the loom by means of a control derived from the aforesaid shaft when it moves to transfer position. TTD: 11-48

Bobbin lock. Bobbin lock. Wilfred J. Vaillancourt. USP 2 449 258, Sept. 14, 1948.

This invention pertains to a bobbin lock, particularly to one especially designed for use on the Draper type rayon loom, it having for its primary object to prevent the bobbins from "rolling" relatively to the battery disc on which they are mounted, which movement is detrimental to a proper takeoff of the threads and ordinarly occurs, in the absence of a locking medium, because of vibrations set up in the battery disc during loom operation. TTD: 11-48

Checking device. Checking device for the warp threads in circular looms. Christian Christiansen & Gustav O. K. Rüsch. USP 2 150 183, Sept. 28, 1948.

In circular looms for the weaving of hoses of hemp or the like, it is important, in order to make the hoses hold tight at higher pressures, to keep both the weft threads and the warp threads very taut so as to obtain a tight texture. In the circular looms used up till now, the warp threads were each loaded with a weight suspended on the thread between 2 guide rods situated between the bobbins and the loom heddles. These weights had to be rather heavy and the thread consequently was subjected to a very great stress, which was further increased by the kinetic energy of the weight by the falling of the same during the backward movement of the thread at the closing of the shed. Breaks of the warp threads therefore easily occurred. The present invention is a device for checking the warp threads, by means of which device the said draw-back is eliminated by the fact that a very light weight may be used. This invention provides a device comprised of one or more drums or rollers over which the threads are passed, and which are stopped when the threads are pulled forward by the opening of the lease, whereby the threads are subjected to a checking or braking effect by sliding on the drum or drums, whereas the drum or drums may rotate freely under the action of the threads when they are running backwards at the closing of the lease. The stopping and release of the rollers or drums may be effected in various manners, but is effected in the simplest way by means of a ratchet device, which may be of the friction type or of the usual ratchet wheel type. TTD: 11-48

Stop motion. Warp and harness stop motion for looms. Harold H. Babb & Dwight L. Moody. USP 2 444 085, June 29, 1948.

This invention relates to a warp and harness stop-motion for automatically tripping the plunger of the flexible cable to stop the loom should the harness become too low and contact the tripping bar. TTD: 11-48

Stop motion. Stop motion mechanism. Robt. R. Barnes & Walter G. McCulloch (to Am. Enka Corp.). USP 2 447 553, Aug. 24, 1948.

This invention provides a drop wire containing a self-threading eyelet in the top which enables the wire to be attached or detached from a yarn without breaking the yarn. The lower shank is cut in order that the drop wire may be removed or placed on an electrode bar without disturbing the machine. The drop wire is designed to be made from a single metal stamping. TTD: 11-48

Fabric construction IV 2 c

Absorbent fabric. Textile fabrics. Raymond E. Reed & John F. Ryan (to The Kendall Co.). USP 2 444 115, June 29, 1948.

The present invention relates to textile fabrics, comprising open mesh textile sheet material having in intimate contact therewith a film of heterogeneously intermingled fibers which are bonded to the open mesh sheet material and to one another by the coalescent qualities of a portion of the fibers. These fabrics are particularly useful in the surgical and medical fields as they may be made to exhibit very desirable absorbent properties derived from high capillarity combined with large capacity for retaining liquids, particularly aqueous liquids, blood, lymph, and the like. Such fabrics are also useful in many fields in which absorbency may or may not be of importance, for example, in the nursery, sanitary and coated products fields, in which these fabrics have been found to contribute desirable characteristics, for example to such products as dispensable diapers, waterproof-backed dressings, and other coated or impregnated fabrics. TTD: 11-48

Byrd cloth. With Byrd Cloth at the South Pole ... my experience with cotton fabrics for protective clothing. Richard E. Byrd USN, (RTD) *Textile Colorist 70*, 28-9, 52, 54 (July, 1948).

The need for light-weight protective clothing for use under the most severe conditions, the development and subsequent use of Byrd Cloth, made exclusively by Reeves Bros., is discussed by the man who was instrumental in developing the material and whose name it bears. TTD: 11-48

Nylon ninon. Nylon ninon market developing. Anon. *An. Wool Cotton Reptr. 62*, 15-16, 57 (Oct. 14, 1948).

Analysis of a lightweight cloth of superior strength, flameproof, and impervious to soil shows a plain woven nylon material with a large number of picks per inch. Extreme care must be taken in the manufacture of this cloth because

it is so light in weight and the yarns are so regular that any defect is made especially apparent. TTD: 11-48

Pre-embossing rayon crepe. Some aspects of the pre-embossing of rayon crepe fabrics. Anon. *Silk & Rayon 22,* 686, 688, 690, 692 (May 1948).

The construction of rayon fabrics for creping and the principles involved are discussed. The special crepe embossing calendar and its operation are also described. TTD: 11-48

Advanced textile design. Wm. Watson. New ed. London, Longman's Green & Co., Ltd.; 532 pp.; 25/ net.

Reviewed in *Silk & Rayon 22,* 422 (Mar. 1948). TTD: 11-48

Knitting — IV 3

New fibers in knitting. Use of nylon and other new fibers in knitting. W. A. B. Davidson. *Rayon Textile Monthly 29,* 75-6 (Feb. 1948).

The use of new fibers in knitting, made possible in part by recent advances in knitting machinery, are discussed briefly. TTD: 11-48

Nylon hosiery. Nylon holds ascendant position in present hosiery demand. W. A. B. Davidson. *Rayon Textile Monthly 29,* 74-5 (Mar. 1948).

Technical difficulties arising in connection with the knitting of monofilament nylon yarns are discussed briefly. It is predicted that a yarn similar to nylon in knitting properties will appear soon. TTD: 11-48

Nylon hosiery. Handling nylon hosiery (A survey of mill practices). Staff prepared. *Textile Industries 112,* 199-203, (Mar. 1948).

A survey has been made of 12 knitting mills in the South and East to determine what handling methods are used to reduce picks and pulls in nylon hosiery. The practices of each of the 12 mills are discussed individually and a summary of the practices is given. TTD: 11-48

Stocking turner. Stocking turner. Clyde Ludington. USP 2 447 192, Aug. 17, 1948.

This invention relates to new and useful improvements in stocking turners and the primary feature of the present invention is to provide a device adapted to quickly and easily turn stockings in a manner so that the operator will have both of his hands free to manipulate the stocking. Another important feature of the present invention is to provide a machine for turning stockings that is small and compact and conveniently attached to

a supporting structure at the desired height to accommodate an operator. Further features of the present invention are to provide a stocking turning machine of the character referred to, including a protective apron at one end of the device which is adapted to prevent the tearing or snagging of stockings which frequently occurs in other such machines on the market at the present time. The machine and its operation are described with the aid of a drawing. TTD: 11-48

Knitting machines — IV 3 a

Coulier-motion. Coulier-motion setting is skillful operation. R. B. LeFeaux. *Textile World 98,* 132, 133 (Oct. 1948).

Successful operation of the knitting heads on a full-fashion knitting machine depend upon correct action of the coulier-motion. This motion transmits rotary movement into reciprocating movement. It controls the movement of carrier rods through friction boxes into a jack through the slur cans. Details on the setting on each particular part of the mechanism are given. TTD: 11-48

Knitting machine. New 400-needle machine announced by Fidelity. *Textile Industries 112,* 215 (Sept. 1948).

A new electronically controlled high speed circular knitting machine which automatically produces seamless ladies' hosiery is brifly noted. TTD: 11-48

Knitting machine. Georgia Komet. Milton C. May. *Textile Industries 112,* 163, 165, 169 (Oct. 1948).

The Georgia Komet is a converted flat knit stitch circular knitting machine that produces flat stitch designs for fancy men's anklets and is not a Komet type machine as the name implies. It has a double feed, double deck cylinder, and is double selective. Stop motions, maintenance, advantages, and disadvantages are among the details of the Georgia Komet that are described. TTD: 11-48

Knitting machine. Knitting machine and method of operating same. Herbert E. Haehnel (to Textile Machine Works). USP 2 432 413, Dec. 9, 1947.

A mechanism is provided to operate the narrowing head of a full fashioned knitting machine. Provision is also made to prevent the stops from moving in the widening direction in response to blows from the yarn carrier rods. TTD: 11-48

Knitting machine. Knitting machine. Oscar Freg-

eolle (to Hemphill Co.). USP 2 438 697, Mar. 30, 1948.

This invention provides improvements in the design and construction of circular knitting machines which include a novel type of wrapping head and a novel form of toe pocket spreader and fabric take up. TTD: 11-48

Knitting machine. Knitting machine. Theodore A. Susan (to Phoenix Dye Works). USP 2 447 103, Aug. 17, 1948.

This invention relates to improvements in knitting or other machines wherein the fabric formed is received by take-up rolls or devices associated with the machines and issues therefrom in continuous tubular or other form. The invention is an improvement on continuous-product machines in that the take-up device includes a severing means for the issuing product mounted on the device and controlled thereby to deliver predetermined lengths of the product from the machine without interference with the continuous production by the machine. TTD: 11-48

Knitting machine maintenance. Maintenance of full-fashioned knitting machines. Robt. H. Johnson. *Textile Industries 112,* 225-29 (Feb. 1948).

The most important points of wear and methods of repairing them are described and illustrated. TTD: 11-48

Knitting machine maintenance. Maintenance of seamless knitting machines. Jerome Dodge. *Textile Industries 112,* 232-33, 235, 237, 239-40 (Feb. 1948).

The importance of a systematic program of maintenance and the keeping of proper records are stressed. Lubrication and cleaning are important phases of an adequate maintenance program. TTD: 11-48

Pattern wheel machine. Three-position-wheel machine by Brinton. Anon. *Textile Industries 112,* 161 (Oct. 1948); *Textile Age 12,* 117 (Sept. 1948).

A modernized 3-position pattern wheel allows the making of figure patterns without float stitches, the floating yarn being laid in generally on alternate needles. The wheels may be instantly installed or removed from the knitting machine, and as many wheels may be used as necessary to achieve the desired pattern. Plaid, jacquard, striped and patterned effects can be produced by by this 3-position-wheel machine. TTD: 11-48

Stitch cams. Stitch cams in circular knitting. Tracy T. Teague. *Textile Industries 112,* 197, 199-200, 203, 205, 207, 209 (Sept. 1948).

The theory and application of stitch cams in circular knitting are discussed, with details of side cams, end cams, concave cams, function of the concave surface, double hollow ground cams, the effect of weights on the fabric, and plating. TTD: 11-48

Yarn feeder. Mechanism for feeding yarn in circular weft knitting machines. Arthur Shortland (to Mellor Bromley & Co., Ltd.). USP 2 448 498 Aug. 31, 1948.

The yarn feeding mechanism according to this invention comprises, in its simplest form, a moveable yarn guide and an associated yarn trapper, and is adapted to operate so that a length of a yarn held between the guide and the trapper is initially positioned so as to extend from front to back of a circular series of sinkers or web holders so as to be engaged by a sinker or web holder to effect introduction of the yarn to the needles. The mechanism is, of course, adapted to discontinue feeding a yarn to the needles, by reversion to its original position, during which movement the running yarn is trapped and severed so that another length is held in readiness for the next introduction. TTD: 11-48

Control devices — IV 3 b

Detecting imperfections. Apparatus for detecting imperfections in filimentary materials. Alexander C. Frankwich (to Western Electric Co., Inc.) USP 2 446 647, Aug. 10, 1948.

This invention relates to apparatus for detecting imperfections in filamentary materials, for stopping the operation of knitting machines, brading machines, or the like, when a knot or other enlargement occurs in a strand being operated upon thereby. There is provided an imperfection-detecting apparatus comprising a pivotally mounted arm biased in its normal operating position in one direction by a resilient means arranged in a toggle relationship therewith. A size-gauge is positioned on the end of the pivotally mounted arm and has provided therein a bore designed to permit a textile-insulated conductor to be advanced through and also to permit the passage of a conductor containing permissible manufacturing variations without actuating the toggle arrangement beyond its tripping point. When a conductor being advanced through the detector contains a knot of such size that it will not pass through the detector, it is engaged and actuates the pivotally mounted arm in a direction opposed by the resilient biasing means. After the pivotally mount arm has been actuated a pre-

determined distance, the toggle action of the resilient bias serves to snap the arm around to its tripped position, whereupon it actuates a switch to cause the operation of the machines and the advancement of the conductor to be stopped.

TTD:11-48

Fabric construction IV 3 c

Feeding rubber yarn. Proper feeding of rubber betters elastic knit goods. Harry Wignall. *Textile World 98*, 139, 204, 207 (Oct. 1948).

Rubber yarn is frequently incorporated into knit fabrics for the use of surgical fabrics, foundation garments and bathing suits. Because of the high elongation of rubber under small loads as compared with usual knitting textile fibers, many difficulties are found in such a knitting process. Proper design and maintenance of feed wheels will eliminate many of the difficulties. Frequently attachments are necessary to the feed wheels to supply the correct length of yarn for knitting and to relieve all tension. TTD: 11-48

Hosiery construction charts. Hosiery construction charts offer many advantages. Staff Interview. *Textile Industries 112*, 232-33, 236, 241 (Apr. 1948).

The use of hosiery construction charts is discussed briefly. Three charts designed by a practical mill man and in use by several plants are illustrated. TTD: 11-48

Knitting hosiery. Hosiery and method of producing same. Howard Marsland (to Vermont Hosiery and Machinery Co.) USP 2 444 403, June 29, 1948.

This invention relates especially to hosiery of the type adapted to be manufactured in circular hosiery knitting machines. It provides improved methods of knitting heel pockets and also the structure of this portion of a stocking, with a view both to producing a better fitting heel and also reducing the expense of manufacture of this part of the stocking. TTD: 11-48

Laminated fabric. Laminated fabric. Angus Bell & Ernest L. Greenwood (to Celanese Corp. of America). USP 2 444 089, June 29, 1948.

This invention relates to fabrics and fabric articles, and especially to multiply fabrics (including two-ply fabrics) the plies of which are united by means of a thermoplastic material, and to articles formed of such fabrics. Such multiply fabrics are referred to as "laminated fabrics." The laminated fabrics of the invention comprise a plurality of fabric plies bonded together at intervals in such a way that along a line parallel to one edge of the laminated fabric, areas in which the plies are bonded alternate with areas in which they are free, each of the fabric plies having structural elasticity in the direction of said line, so that the laminated fabric is elastic in that direction. TTD: 11-48

Reverse plating. Reverse plating of knitting fabrics. Jas. L. Getaz. USP 2 444 503, July 6, 1948.

It is the purpose of this invention to provide means for controlling the plating of ribbed fabrics in both face and rib wales, so that either of two contrasting colors may be made to appear on the face of the fabric in any stitch of any wale. This invention may be used to produce either large or small patterns of contrasting colors in any combination of face and rib wales which may be desirable for the construction of the ribbed fabric. TTD: 11-48

Special fabrics IV 4

Rug construction. Production of rugs, carpets and the like. Gustav Michaelis. USP 2 443 358, June 15, 1948.

The main object of the invention is to provide an improved method of making rugs and the like without using a loom, by producing a fabric comprising wefts of wool, or any other suitable material, placed parallel in close contact with each other and united along lines at right angles to the wefts over a length corresponding to one of the two dimensions or portions of the intended rug, carpet, or the like, and at such distances apart from each other as required for the desired pile of the rug. The distances specified are approximately double the height of the intended pile, and the fabric is attached to a prefabricated backing along the junction lines of the wefts with the junction lines close together with the portions on either side of each junction line bent up on the prefabricated backing to form the pile.

JED TTD: 11-48

Fabric processing IV 5

Drying. Efficient drying of wet fabrics influences processing costs. 1. Effects of the varying water absorption properties of textiles. 2. Special treatment required by rayon fabrics in mangling. Aqua. *Silk & Rayon 22*, 254, 256, 258, 260 (Feb. 1948); 546, 548, 550 (Apr. 1948).

Drying costs may be reduced by proper removal of excess water from fabrics prior to their intro-

duction to the drying machine. The residual amount of water is determined by 1) the mechanical efficiency of the hydro-extractor, mangle, or suction machine, 2) the absorbent character of the textile material, and 3) the amount of water combined chemically with the textile fibers. The problems and considerations involved are discussed. While the mangle is the most simple and economical method for removing excess water from rayon fabrics, care must be taken to avoid certain faults that will result in damage to the cloth. TTD: 11-48

Drying. Some notes on textile drying processes and equipment, 1. Factors affecting the efficient delivery of heat to the drying apparatus, 2. Methods of warp sizing, padding treatments, and roller printing. Anon. *Silk & Rayon 22,* 276-77 (Feb. 1948); 412, 414 (Mar. 1948).

The use of various types of drying equipment for the different textile drying needs are discussed. Faults arising from improper drying processes are noted and suggestions for avoiding them are given. TTD: 11-48

Drying. Textile drying. Myron T. Fleming. *Rayon Textile Monthly 29,* 60-1, 62 (Mar. 1948).

The general principles involved in textile drying are discussed, and the importance of a high velocity of air past a drying surface is emphasized. Two special methods of drying, infrared radiation and high-frequency dielectric, are analyzed with particular stress being placed on the basic theories. Drier design requirements are discussed briefly. TTD: 11-48

Drying control. New electronic control gives complete instrumentation of drying process. *Silk & Rayon 22,* 38 (Jan. 1948).

An automatic electronic control unit has been designed to operate in conjunction with the Fielden Electronic Hygrometer. The device makes corrections in speed proportional to the moisture content error. Pilot lamps are used to indicate whether the material is at the required moisture content, or whether it is too wet or too dry, and when corrections in speed are being made. TTD: 11-48

Infrared drying. Method and apparatus for removing volatiles from articles involving the use of infrared lamps. Herbert L. Grapp. USP 2 446 822, Aug. 10, 1948.

An improved method of removing volatile substances from coated or impregnated articles by means of infrared lamps is described. The efficiency of the infrared lamps is increased by using forced air convection to remove the evaporated material. This eliminates the formation of fog or mist clouds adjacent to the article being treated, and prevents the infrared lamps from being coated with vaporized substances. CAC TTD: 11-48

Opening roll unit. Adjustable spiral opening roll unit. Anon. *Textile Industries 112,* 225 (Sept. 1948).

Wrinkles and doubled selvedges are removed from all types of fabrics as the fabrics are being processed in open width by an adjustable spiral opening roll unit. Application of the unit may be found on padders, mangles, etc. TTD: 11-48

Fabric applications IV 6

Fabric application. Method for making heat-molded articles containing fabric reinforcements. Frederick F. Olson (to The B. F. Goodrich Co.). USP 2 448 114, Aug. 31, 1948.

This invention relates to a method of making molded articles such as heat-molded articles, and particularly thin-walled articles such as liners for soldiers' helmets, comprising a thermoset resin containing fabric reinforcements, to the articles so produced, and to the apparatus used in making the articles. TTD: 11-48

Shoe sole. Terry cloth shoe sole. Alan E. Murray. USP 2 448 455, Aug. 31, 1948.

This invention relates to a shoe sole made of layers of terry cloth impregnated with vulcanizable liquid synthetic or natural rubber. The shoe sole thus formed resists cracking and has great elasticity. TTD: 11-48

Substitute leather. Production of substitute leather. Andre Bernard. USP 2 446 806, Aug. 10 1948.

This invention provides a method for producing a substitute leather by applying to a fabric carrier, such as cotton cloth, a compound emulsion obtained by the addition of an aqueous emulsion of anthracene oil to an aqueous emulsion of polyvinyl resin. TTD: 11-48

Textiles in surgery. Surgical use of nylon, rayon and silk. W. Schweisheimer. *Rayon Textile Monthly 29,* 79-80 (Feb. 1948); *Silk & Rayon 22,* 138 (Jan. 1948).

A brief survey of the applications of nylon, rayon, cotton and silk as sutures and surgical dressings is given. TTD: 11-48

Cotton in the shoe industry. Frank A. McCord & Raymond Steinbach, Jr. Memphis, Tenn., Nat'l

Cotton Council of America, 1948. 13 pp.
TTD: 11-48

CHEMICAL RAW MATERIALS V

Plastics and elastomers V 1

Syntilon. Syntilon, a plastic waterproof film for everyday use. L. R. Sherman, Plastic Film Corp. *Textile Colorist 70,* 34 (July, 1948).

The uses of a vinyl film which looks like a fabric and can be handled like one are discussed briefly. The film, bearing the trademark name of Syntilon, is made in a variety of colors and lends itself to a large number of applications.
TTD: 11-48

Ultrasol. Ultrasol, a vinyl resin coating for outdoor fabrics. P. L. Slayton, Monsanto Chemical Co. *Textile Colorist 70,* 35 (July, 1948).

The characteristics and uses of "Ultrasol", a vinyl resin dispersion made by Monsanto Chemical Co., are reviewed briefly. This coating is said to be the most practical approach to the problem of ageing, abrasion, weathering, and fire put on the market, to date. The vinyls retain a dry feel in summer heat and are very resistant to cracking in winter.
TTD: 11-48

THE SCIENCE OF PLASTICS. Vol. 1. H. Mark & E. S. Proskauer. New York, Interscience Publishers, Inc., 1948. 640 pp.

Reviewed in *Silk & Rayon 22,* 570 (Apr. 1948).
TTD: 11-48

Surface-active compounds V 2

Carboxymethyl cellulose. The application of carboxymethyl cellulose to the wet processing of textiles. Midwest Section, AATCC. *Am. Dyestuff Reptr. 37,* 596-602 (Sept. 6, 1948).

The possible uses of sodium carboxymethyl cellulose (CMC) in the textile field are briefly reviewed, and experiments are described in which CMC was studied as a detergent aid. Based on reflectance measurements, a small but significant increase in soil removal was caused by the CMC; this was attributed to its suspending action rather than to its soil removal ability. A number of illustrations of results obtained with various detergents, with and without CMC, are presented. The improvements effected were more pronounced with the synthetics than with soap.
WPU,JR. TTD: 11-48

Detergents. Polymeric textile detergents and their possibilities; recent United States progress with soap substitutes. Anon. *Silk & Rayon 22,* 564, 566, 568 (Apr. 1948).

Compounds having a high molecular weight and surface-active and detergent properties are being termed *polymeric detergents.* These substances are water-soluble and in solution exist not as aggregates of ions and molecules loosely held together by weak physical forces, but exist as macro-molecules in which all the various atoms are held together strongly by valency forces not appreciably modified by varying conditions of temperature and dilution. Polymeric detergents have been found useful in the laundering of materials containing cellulose fibers, in the scouring of wool, in dyeing processes, and as emulsifying and dispersing agents for oils and other substances.
TTD: 11-48

Wetting agents. Non-ionic wetting and washing agents—some patents reviewed. Anon. *Silk & Rayon 22,* 400, 402 (Mar. 1948).

A number of patents on non-ionic surface-active compounds are reviewed and their practical possibilities discussed briefly. Non-ionized compounds, those in which the surface-active effect is exhibited by the whole molecule or aggregate of molecules, are useful in certain textile processes. In ionisable compounds the wetting and detergent properties are associated with an electrically charged ion which must be taken into account. Anion-active bodies are attracted to and absorbed by wool in certain pH conditions, thus ceasing to exert their surface active properties. Cation-active bodies may be absorbed by cellulosic fibers under certain conditions. Allowance may have to be made for the charge on dye particles or, if washing, on dirt particles, in deciding the proper surface-active agent to be used.
TTD: 11-48

CHEMICAL PROCESSING VI

Desizer. Liquid desizer. Anon. *Textile Industries 112,* 225 (Sept. 1948).

A brief note on Rhozyme LA, a new liquid distatic enzyme, which is reported to give thorough, uniform, and rapid desizing.
TTD: 11-48

Impregnating tubular fabrics. Device for the manufacture of artificial sausage skins. Julius Wolff (to Attorney General of the U. S.). USP 2 448 067, Aug. 31, 1948.

This invention relates to a device for impregnating the inner surface, as well as the outer surface, of a tubular fabric such as a sausage skin. The mass of impregnating material is pressed against the inner wall of the tube and is then smoothed by wiper rings, and the superfluous material is stripped off. The impregnation of the

inner and outer surfaces of the fabric is effected simultaneously. TTD: 11-48

New finishes. Wealth of new ideas at Blackley finishing laboratory. Staff Reporter. *Silk & Rayon 22,* 466, 468 (Apr. 1948).

An account of a visit to the Textile Finishing Laboratory of Imperial Chemical Industries (Dyestuffs Division Laboratories), Blackley, is given. New finishes developed by this laboratory include an anti-snag process for nylon hose; oiled nylon taffetas for rainwear and umbrellas; new detergents, one of which will remove graphite stains from rayon and nylon lace; resin treatments for permanent glazing of chintz; and new machines for the applications of resins and plastics to fabrics. It is pointed out that some of the new developments are not being taken up by the manufacturers and that the consumer therefore is not obtaining the benefits of technological developments. TTD: 11-48

Resin curing range. Resin curing range features high speed and heat. Anon. *Textile World 98,* 123 (Oct. 1948).

The Avondale Mills at Sylacauga, Ala., has installed a new resin curing range. The cloth is unreeled onto a scray, and thence through a 3-bowl mangle and into a preset dyer at a temperature of 250°F. It then enters a 60-ft. tenter frame enclosed in a steam heated chamber, operating at 280°-300°F. After being dried here, it enters a curing oven running up to 500°F. Leaving the curing oven, it is cooled and rewound. In addition to serving as a curing range, it may operate as a normal tenter dryer at 50 to 200 ypm. The range was built to specifications.
LCL TTD: 11-48

Softening rayon. Softening of rayons by the use of special auxiliaries. Anon. *Silk & Rayon 22,* 262, 264, 266, 268 (Feb. 1948).

Softening agents are especially useful in connection with rayon textiles as rayons are more prone to lose their softness in bleaching, dyeing and finishing operations than are other fibers, especially cotton. The development, uses and properties of the Sapamines as softening agents are reviewed and discussed. TTD: 11-48

Textile processing. Current processing problems of acetate and viscose rayon fabrics. H. G. Scull, A. M. Tenney Assoc. *Am. Dyestuff Reptr 37,* 468-470 (July 12, 1948).

In an address the author discussed such problems as the presetting of woven and of flat-knit fabrics containing acetate yarns, the cleaning of soiled grey goods, the fume fading of acetate fabrics,

the preparation of developed dyes on acetate, and the vat dyeing of acetate and acetate-viscose fabrics.
WPU,jr. TTD: 11-48

COLOR VII

COLORS, WHAT THEY CAN DO FOR YOU. Louis Cheskin. New York, Liverwright Publishing Corp., 1947. 333 pp.; price: $5.00.

Reviewed in *Rayon Textile Monthly 29,* 112 (Apr. 1948). TTD: 11-48

PRACTICAL COLOR SIMPLIFIED. Wm. J. Miskella. Published by Miskella Infra-Red Co., 1947; 113 pp.; price: $5.00.

Reviewed in *Rayon Textile Monthly 29,* 105 (Feb. 1948). TTD: 11-48

Bleaching VII 1

Bleaching jute. The bleaching of jute with chlorite. P. B. Sarkar & H. Chatterjee. *J. Textile Inst. 39,* T274-81 (Aug. 1948).

The effects of residual lignin, fat and wax, and jute variety on bleaching and of chlorite concentration, temperature, time of treatment and yarn to liquor ratio on the wet strength of the bleached jute were measured and the results tabulated. Data are also given on the effect of pH, of buffering, and of Textone on bleaching; also, the effect of pretreatment with alkali on the wet strength of the bleached yarn. It was found that even a mild scouring prior to bleaching is highly detrimental to jute, and the processes employed for bleaching cotton, flax, or true hemp are not applicable. For reasonable wet strength and a fair degree of whiteness, no suitable conditions could be found for sodium chlorite bleaching. Conditions for producing a pale yellow color are given.
TTD: 11-48

Dyeing VII 2

Azoic dyes. Some facts about azoic dyestuffs and their application. Anon. *Silk & Rayon 22,* 694, 696, 698, 700, 702 (May, 1948).

The discovery of diazo compounds and the early defects of these dyestuffs are noted briefly. The characteristics and various methods of application of azoic dyestuffs are discussed in some detail. TTD: 11-48

Dyeing. New continuous dyeing "Duplex" machine. Marcel J. Pagerie. *Rayon Textile Monthly 29,* 93-4 (Mar. 1948).

The need for more efficient dyeing machines and

the advantages of the new Duplex machine are discussed. There is a brief technical description of the machine. TTD: 11-48

Dyeing nylon. Dyeing of nylon with logwood. H. R. Tisdale, Am. Dyewood Co. *Rayon Textile Monthly 29,* 79-81 (July, 1948).

Two methods of dyeing nylon with Logwood Black are given, and the dyeing of nylon in combination with other fibers is also discussed. TTD: 11-48

Dyeing of fur felt. Some factors in the dyeing of fur felt hats. Harold H. Tucker. *Am. Dyestuff Reptr. 37,* 483-493 (July 26, 1948).

The dyeing of fur felt hats is compared with wool dyeing and the differences discussed. The types of dyeing machines that are used in the trade for the dyeing of fur felt hats are described as well as the method used in dyeing with each machine. Some experimental evidence is presented in support of the theory that certain dyestuffs have specific properties in promoting damage to fur felt during the dyeing operation. A description is given of an experimental dyeing machine that is suitable for dyeing fur felt, under carefully controlled conditions, at the same felt-liquor ratio used in the factory operation. Some pH dyestuff exhaustion curves are given for representative dyestuffs on fur felt and wool. A method of sampling hats for physical tests is described and the merit of the flexing test as a means of comparing the results of various dyeing methods is discussed. An example is given of an instance where the application of physical tests resulted in the solution of a manufacturing problem. Evidence is given that the prevention of damage during the dyeing operation is a most important problem in the dyeing of fur felt hats.
WPU,jr. TTD: 11-48

Dyeing rayon yarn. Rayon yarn dyeing. Robt. W. Joerger, Franklin Process Co. *Textile Industries 112,* 65-7 (Jan. 1948); 112, 115, 117, 119, 121, 181, 182 (Mar. 1948); 132-37 (Apr. 1948); 98-101 (May, 1948).

The qualities of rayon, its uses, and method of handling are reviewed briefly. The use and application of direct cotton colors on viscose rayon are discussed. The dyeing of viscose rayon with vat dyes, indigosols, naphthols, sulfur dyes, and basic colors is also considered (to be continued).
TTD: 11-48

Dyeing silk hose. Special dyeing and finishing requirements of silk hose, I. Features of processing, dyeing procedure, and equipment. Anon. *Silk & Rayon 22,* 404, 406, 408, 410 (Mar. 1948).

The dyeing of silk hose is discussed with reference to softening and conditioning, uneven filaments, avoiding bar effect, degumming in dye bath, dyeing machines, guarding against chafing, dye particles, and de-swelling by drying.
TTD: 11-48

Dyeing wool. Influence of chlorination on wool dyeing. H. Luttringhaus, General Dyestuff Corp. *Am. Dyestuff Reptr. 37,* 464-5, 471-2 (July 12, 1948).

This is an account of an address in which are discussed the acid and alkaline chlorination of wool, the factors involved in dyeing before and after chlorination, the similarity in dyeing behavior of light-exposed wool and chlorinated wool, the influence of chlorination on the rates of dyeing, and the selection of dyes for chlorinated wool.
WPU,jr. TTD: 11-48

Dyeing wool. Effect of light exposure on animal fibers. Arthur N. Patterson, S. Stroocil & Co., Inc. *Rayon Textile Monthly 29,* 97 (Apr. 1948).

The effect of light exposure of animal fibers is regarded as a result of chemical change or decomposition of the disulfide linkage of the fiber. It has been determined that the exposed portion of the fleece on the sheep's back is directly affected by sunlight and weather conditions, which in turn affect the dyeing characteristics of the fiber by changing its affinity for dyestuff. A method and technique for dyeing light-exposed wools is given. TTD: 11-48

Dyeing wool. Importance of pH control in wool processing. S. Mooradian & H. E. Millson. *Rayon Textile Monthly 29,* 83-5 (Aug. 1948); 121-4 (Sept. 1948).

A detailed description of the use of pH measurements of wool fabrics prior to dyeing is given. (to be continued). TTD: 11-48

Dyes. New line of dyes. Anon. *Textile Age 12,* 118 (Sept. 1948).

Calconyl Double solutions, a new line of stabilized azoic dyes requiring acid aging, produce heavy bright shades of very good fastness to light, washing, chlorine, perspiration, dry cleaning, and hot pressing. TTD: 11-48

Dyes and after-treatment. New color and after-treatment. Anon. *Textile Age 12,* 118-19 (Sept. 1948).

A new group of dyes, Cuprofix colors, and an after-treatment employing a cation-active resinous compound, Cuprofix, are noted. The Cuprofix after-treatment is reported to improve the fast-

ness of cellulosic fibers to home laundering, hot wet pressing, and perspiration. TTD: 11-48

Fugitive colors. Contribution to the study of the fastness of fugitive colors on wool. M. Von Overbeke, Lab. de la Chambre de Commerce de Roubaix & G. Mazingue. *Bull. Inst. Textile de France,* No. 6, 21-4 (June, 1948); *in French.*

With the purpose of determining what dyes can be used as fugitive colors and to clasisfy them according to their resistance to washing, a number of basic and acid dyes were applied by (1) soaking in the cold dye bath, without acid, and (2) by coloration of the emulsion used to oil the card sliver. Each hank of yarn or card sliver was then cut into 3 parts. The first was steamed for 15 mins., the second was heated for 60 hrs. at 105°C, and the third was kept as a control. The samples were then soaked for 30 mins. in a bath containing 2 g. of soap and 2 g. of anhydrous Na_2CO_3 per liter. They were then rinsed. The dyes were classified as good when they could be easily removed; medium, when removal was incomplete, and bad when they were quite fast. Kiton S yellow, Kiton S red, acid green, and pure Kiton V blue were found to be good fugitive dyes when applied by soaking in the cold. Kiton S yellow, Kiton S red, acid green and Saframine G 000 were rated as good when added to the oil emulsion.

TTD: 11-48

Natural dyes. Some ancient natural dye sources. Bruce Brown. *Rayon Textile Monthly 29,* 92-3 (Feb. 1948); 97 (June, 1948); 89 (Aug. 1948).

Brief historical notes on early natural dyes, their sources and use are given. TTD: 11-48

Padding. Padding operation has many variables. C. L. Zimmerman & G. L. Royer. *Textile World 98,* 124, 125, 196, 198 (Oct. 1948).

The amount of dye deposited on a particular fabric during padding for continuous dyeing processes depends upon (1) the concentration of dye in the pad bath, (2) the per cent pickup, and (3) the ratio of dye to water picked up. The second two of these variables are studied in the work reported here. Results of work performed on two different fabrics is reported in this article. The weight of fabric, the dye used, the temperatures, speed, and pressure of the padder all affect the pickup. In many cases, the use of a wetting agent will help. Equal takeup of the dye and the water is very desirable.

LCL TTD: 11-48

Rayon dyeing. Scientific study of rayon dyeing.

G. L. Royer, Calco Chem. Div., Am. Cyanamid Co. *Am. Dyestuff Reptr. 37,* 525-28 (Aug. 1948).

Some of the recent work done in the study of rayon dyeing, particularly in the Calco laboratories, was reviewed in an address. Topics discussed included measurements of rates of dyeing with the Dyeometer, the effects of variations in rayon yarn manufacture upon their dyeing behavior, the vat dyeing of rayons, and the use of microscopy in the study of rayon dyeing.

WPU,jr. TTD: 11-48

Rayon dyeing. Rayon dyeing and finishing. H. F. Creegan, Am. Viscose Corp. *Am. Dyestuff Reptr. 37,* 520-24 (Aug. 9, 1948).

Several phases of rayon dyeing and finishing, including yarn and raw stock dyeing, and tricot and woven goods dyeing and finishing were discussed in this address. New machinery and techniques were described and suggested for improvements in raw stock dyeing, in continuous filament skein dyeing, in package dyeing of spun rayon yarns, and for presetting acetate tricot fabrics. Several new machinery developments for piece goods, and the pad-beck techniques for direct color application were mentioned.

WPU,jr. TTD: 11-48

Vat dyeing. Process for dyeing textile fibers with vat dyes. Nicholas R. Vieira (to E. I. du Pont de Nemours & Co.). USP 2 447 993, Aug. 24, 1948.

The use of a steam chamber for reduction and oxidation of vat dyes is described. A vat dye in its unreduced, highly dispersed form is padded onto the textile. Then, without drying, the textile is carried directly into the steam reduction chamber where the reducing solution is maintained at boiling temperature. The material is alternately dipped in the solution and then subjected to the steam atmosphere above the reducing bath. The average time required for reduction by this method is approximately 2 minutes, using 1.5 oz. per gal. of caustic soda and 1.5 oz. per gal. of sodium hydrosulfite. When reduction is complete, the usual oxidizing, rinsing, and soaping treatments are carried out.

CCJ TTD: 11-48

Vat dyeing rayon. Will competition force continuous vat dyeing? Arthur R. Wachter, Am. Viscose Corp. *Textile Colorist 70,* 16, 50-1, 54 (Aug. 1948).

The advantages of continuous vat dyeing of rayon over conventional methods are discussed, and the technical problems involved are considered briefly.

It is pointed out that improved processing techniques require great precision and that there is a shortage of technically qualified personnel for such operations. Equipment manufacturers, however, are prepared to meet the demand upon them.
TTD: 11-48

Printing VII 3

Color development. Indigosol composition comprising a naphthol sulfonate and method of applying. Earl L. Pelton & Chas. O. Hutchenreuther (to The Dow Chemical Co.). USP 2 445 632, July 20, 1948.

A naphthol sulfonate is used to assist color development by steaming of indigosol dyes derived from tetrabromindigo.
MC TTD: 11-48

Designing. Creative fabric design the Tillet's way. Anon. *Textile Colorist 70*, 20, 56 (Aug. 1948).

Creating designs to suit fabrics, instead of applying a preconceived design to a certain type of cloth, is the basis of a new system of textile designing developed by D. D. and Leslie Tillet of New York. Designs are developed on samples of the goods to be printed and in this way converters are assured of designs that are in harmony with the end purpose of the fabric. TTD: 11-48

Designing and printing. Rainwear designing and printing. Dorothea McCoy, Am. Silk Mills, Inc. *Textile Colorist 70*, 37 (July, 1948).

Recent developments in the designing and printing of fabrics for rainwear are discussed. Fleecy and suede types of fabrics have not been made water-repellent. Only 29% of the American population own raincoats, and it rains, on the average, every third day. There is a large potential market. Designers have greatly improved the appearance of rainwear. TTD: 11-48

Discharging effects. Process for the production of pure white discharging effects on cellulosic materials. Chas. Babey & Frederic L. Goodall (to J. R. Geigy A. G.). USP 2 446 992, Aug. 17, 1948.

One-step white discharging of copper-containing or after-coppered dischargeable dyestuffs is effected on cellulosic material by a sulfoxylate formaldehyde discharge paste containing an agent yielding cyanide ions.
MC TTD: 11-48

Dyes. New line of dyes for cotton printing. Anon. *Textile Industries 112*, 193 (Oct. 1948).

Colconyl Double Solutions are stabilized azoic dyes requiring acid aging. They have good fast-

ness to light, washing, chlorine, dry cleaning and hot pressing, and to perspiration. TTD: 11-48

Printing. Application printing of acetate cellulose fabrics. H. Baumann. *Rayon Textile Monthly 29*, 89-90 (Mar. 1948); 102 (Apr. 1948).

This article is a review of the developments that have taken place in the art of printing acetate cellulose fabrics during the years since the inception of the fiber and the invention of the dispersed acetate colors.
HAM TTD: 11-48

Printing. A review of the use of Rapidogen dyestuffs and related products in textile printing. F. F. Jacobs. *Rayon Textile Monthly 29*, 80-6 (Mar. 1948).

Up to date information is given concerning the use of Rapidogen dyestuffs as applied to textile printing.
HAM TTD: 11-48

Printing. Discharge printing of acetate rayon. H. P. Baumann. *Rayon Textile Monthly 29*, 94, 95 (June, 1948).

Dyes suitable for discharge printing of acetate rayon are listed. Methods of discharge printing are discussed briefly and representative formulas are given.
HAM TTD: 11-48

Printing. Practical hints on printing stabilized azoic dyestuffs. Anon. *Silk & Rayon 22*, 705-06 (May, 1948).

The principal difficulties in the application of stabilized azoic dyestuffs arise from: 1) possible decomposition in the presence of air, acid fumes, and warm humid temperatures; 2) decomposition as the result of reaction of thickening agents in the form of sour thickenings and the presence of reducing agents in converted starch thickenings; 3) the fact that the print pastes are almost colorless before the formation of the dyestuffs in the fiber in acid or neutral steaming. Suggestions are given for eliminating these and a number of other difficulties encountered in using these dyestuffs.
TTD: 11-48

Printing paste stabilizer. Azo dye compositions stabilized with unsaturated carboxylic acids or salts. Swanie S. Rossander, Chiles E. Sparks & Carl W. Maynard, Jr. (to E. I. du Pont de Nemours & Co.). USP Re 23 016, July 13, 1948.

The present invention provides for preserving acidic textile printing pastes containing diazo salts suitable for ice color printing operations of the kind which are printed on fabric which is

grounded with the coupling component. The printing paste stabilizer is a diazo salt consisting of an alpha-beta unsaturated aliphatic mono- and di-carboxylic acid or its water-soluble sodium or potassium salt. TTD: 11-48

Screen printing. Textile screen printers and pigment colors. Georgia W. Leffinwell & Olive-Sue Linkletter. *Rayon Textile Monthly 29*, 89-92 (Feb. 1948).

The use of pigmented emulsion colors especially designed for textile screen printing is discussed, and the techniques involved are noted briefly. TTD: 11-48

Measurement and defects VII 4

Atmospheric fading. Contribution to the problem of atmospheric fading. E. Meili. *Rayon Textile Monthly 29*, 81-3 (May, 1948).

Nitric oxide in the atmosphere, resulting from the heating of air to a high temperature, is responsible for the so-called gas fading of cellulose acetate rayon dyes. Gas fading may be counteracted by changing the physical surface properties of acetate yarn; this can be done in a satisfactory manner by the use of anti-fume finishes.
HAM TTD: 11-48

Color matching. The illuminant in textile color matching. Dorothy Nickerson, USDA. *J. Optical Soc. Am. 38*, 458-66 (May, 1948).

A subcommittee of the Inter-Society Color Council, in cooperation with the Philadelphia Army Quartermaster Depot and 3 large textile companies made a study of "What color temperature of natural daylight is used by textile color matchers, and what color temperature of artificial daylight do they prefer?" As a result of the study the subcommittee recommended that artificial daylight lamps for textile color matching be aimed at 7500°K with an illuminance of more than 75 and less than 300 foot candles. A summary of the study is given. TTD: 11-48

Color fastness. Testing color fastness to washing. Gösta Nordhammar, Swedish Inst. for Textile Research. *Textil och Konfektion 5*, 140-43 (June, 1948); *in Swedish.*

Experiments comparing the testing of samples for color fastness in a beaker and in the AATCC Launder-O-meter are described. A single washing in a beaker will not always give reliable results on account of the lack of mechanical action. Repeated beaker-washing will give some mechanical action, but the method is very tedious. The Launder-O-meter will give the result at once and is a very convenient apparatus when testing many samples. It is, however, often too large and complicated. The principles of the evaluation of color fastness by means of the change in color and by the staining of white material are also discussed. TTD: 11-48

Gas fading. A study of the effect of certain variables on gas fading tests made under controlled conditions. Frances K. Ray & Pauline B. Mack, Penn. State College, F. Bonnet & A. H. Wachter, Am. Viscose Corp. *Am. Dyestuff Reptr. 37*, 529-36 (Aug. 9, 1948). (cf. TTD: *5*, 539).

This is the sixth paper of this series. Using the equipment previously described (*Am. Dyestuff Reptr. 37*, 355 (May, 1948); TTD: *5*, 613)), the effect of variations in rate of gas flow, time of test, temperature and humidity, and in final heat treatment of gas fading were investigated. Oxides of nitrogen were found to accelerate the tests. Six fabrics representing different degrees of sensitivity to gas fumes were tested. The samples continued to fade for several hours after removal from the exposure chamber.
WPU,jr. TTD: 11-48

Methylene blue. The determination of methylene blue. G. F. Davidson. *J. Textile Inst. 38*, T408-18 (Dec. 1947).

A procedure for the determination of methylene blue is described in which the dye, after reduction to its leuco-compound with chromous sulfate, is titrated potentiometrically with dichromate. Dilute solutions of this dye, so standardized, are suitable reference solutions for the colorimetric determination of other methylene blue samples.
ELW TTD: 11-48

PROOFING VIII

Creaseproofing. Crease resistant finishes, I. Anon. *Textile Industries 112*, 151, 155, 157, 279 (Sept. 1948); II.—119, 123, 125, 127 (Oct. 1948).

The development of crease-resistant finishes as applied to cotton, linen, and spun rayon fabrics is discussed, with details of resin preparation, their application to the fibers, and their effects on the strength of the fabric. The characteristics of resins, their application, factors in resin variations, and the preparation of fabrics in crease resistant finishing are discussed. Print goods treatment, resin impregnation, baking or curing, and after treatments are also reviewed. TTD: 11-48

Fireproofing. The fireproofing of fabrics. An English Correspondent. *Rayon Textile Monthly 29*, 96 (June, 1948).

Research work on the fireproofing of fabrics carried out at the Royal Aircraft Establishment, South Farnborough, England, under the direction of Dr. J. E. Ramsbottom, is briefly described with reference to fire proofing with soluble and insoluble deposits and the fireproofing of kapok.

TTD: 11-48

Fyre bar. Fyre bar. Jerome Neiman, Fairview Finishing Co. *Textile Colorist 70*, 24, 56-7 (Sept. 1948).

The history of making fabrics fire-resistant is noted briefly; fire laws as they apply to fireproofing of fabrics are discussed. A new fire-retardancy substance called *Fyre Bar* is mentioned briefly. *Fyre Bar* is made by a secret, patented process; it is durable, non-water soluble, and can be dry-cleaned 20 times without damage. TTD: 11-48

Mildewproofing. Process gives cotton high rot resistance. Anon. *Textile Industries 112*, 104 (Apr. 1948).

A brief note describes a process for protecting cotton fabric from mildew and other forms of rot. Developed by the Southern Regional Res. Lab., the process converts part of the fiber chemically to cellulose acetate, similar to acetate rayon. Practical and rapid methods for partially acetylating fabric and yarn have been developed. The treatment causes no discoloration, imparts no odor and does not make cotton stick or poisonous. There is no change in the appearance, feel, or strength of the fabric. A quick dye method has been developed for determining the strength of the treatment, making it possible to stop the treatment at the right stage. TTD: 11-48

Mothproofing. New compounds raise mothproofing standards. Jules B. Billard. *Rayon Textile Monthly 29*, 82-3 (July, 1948).

The mothproofing of woolen fabrics is discussed briefly. It is predicted that recent developments in this field will soon put the U. S. ahead of European countries. In Sweden, for example, approximately 90% of the woolens produced are mothproofed before leaving the mills. A premium is charged for the treatment but is generally accepted by the consumers. TTD: 11-48

Shrinkproofing wool. Unshrinkable non-felting wool in all-wool and rayon mixture materials. A. J. Hall. *Rayon Textile Monthly 28*, 559-60, 662-4 (Oct., Dec. 1947); *29*, 94-6 (Feb. 1948); 99-101 (Apr. 1948).

The advantages and disadvantages of various shrinkproofing processes are reviewed in some detail. Discussions of the old wet chlorination process and the process employing synthetic resins are included. TTD: 11-48

Shrinkproofing wool. Shrinkproofing wool socks. H. M. Sandison. *Textile Industries 112*, 229-30 (Apr. 1948).

Of the various methods of shrinkproofing wool, the wet chlorination methods offer the average mill the best means for obtaining shrinkage control. Any mill using the chlorination treatment should have a simple laboratory for checking and seeing that all runs of material consume approximately the same amount of chlorine each time. A procedure for control is given and it is recommended that washing tests be used to compare results as to degree of shrinkage resistance from lot to lot. TTD: 11-48

Shrinkproofing wool. Woolen treatment and products therefor. John B. Rust (to Montclair Rsearch Corp.). USP 2 447 538, Aug. 24, 1948.

This patent describes the preparation of a bath for production of shrinkproofed wool with unchanged hand contining synthetic butadiene polymer, an emulsifying agent, a buffer to keep the pH below 7, and an electrolyte to cause deposition of the polymer upon the wool.

GHC TTD: 11-48

Shrinkproofing wool. Treatment of wool. John B. Rust (to Montclair Research Corp.). USP 2 447 539, Aug. 24, 1948.

The method of shrinkproofing wool comprises preparation of an emulsion of a copolymer of butadiene-1, 3 and an ester of methacrylic acid, an emulsifier, a buffer to adjust pH to below 7, an electrolyte to deposit the copolymer upon wool, and treatment of wool therewith.

GHC TTD: 11-48

Shrinkproofing wool. Butadiene-acrylate interpolymer treatment of wool. John B. Rust (to Montclair Research Corp.). USP 2 447 540, Aug. 24, 1948.

This patent describes the preparation and application of a bath for shrinkproofing wool. The bath comprises an aqueous emulsion containing a copolymer of butadiene-1,3 and from 10% to 60% by weight of the copolymer of an acrylate ester containing less than 8 C atoms, the amount of copolymer being present to give 1 to 25% by weight of copolymer deposition on the wool, a non-cationic emulsifying agent, and at least 25% on the weight of the copolymer of a water-soluble neutral

salt of a monovalent salt-forming radical, the pH of the bath being below 7.

GHC TTD: 11-48

Shrinkproofing wool. Aqueous dispersions of butadiene polymers and treatment of wool therewith. John B. Rust & Chas. W. Pfeifer (to Montclair Research Corp.). USP 2 447 772, Aug. 24, 1948.

Wool is rendered shrink resistant by application of an emulsion of a butadiene polymer. An antioxidant is added to retard the effect of high temperature.

GHC TTD: 11-48

Shrinkproofing wool. Aqueous dispersions of butadiene polymers and treatment of wool therewith. John B. Rust (to Montclair Research Corp.). USP 2 447 876, Aug. 24, 1948.

Wool is rendered shrink resistant by application of an emulsion of a copolymer of butadiene-1, 3 and a methacrylate ester. An antioxidant is used to retard the effect of high temperatures on the wool.

GHC TTD: 11-48

Shrinkproofing wool. Wool shrinkproofing baths containing butadiene copolymers and their utilization. John B. Rust (to Montclair Research Corp.). USP 2 447 877, Aug. 24, 1948.

A process for shrinkproofing wool is described in which an aqueous, substantially stable, emulsion is prepared, containing a copolymer of butadiene-1,3, and from 10 to 80% by weight of either isoprene or 2, 3-dimethyl butadiene-1,3, a buffer, and a non-cationic emulsifying agent. To this emulsion is added after polymerization at least 25% by weight of a water-soluble neutral salt of an alkali metal to cause deposition of copolymer upon the animal fiber to be treated. The polymer can be applied before or after fulling, weaving or scouring, and in some cases in the dye-bath. Mixed goods, including wool-rayon, wool-cotton, etc., may be treated by the same process.

GHC TTD: 11-48

Shrinkproofing wool. Aqueous wool treating baths comprising chloroprene copolymers. John B. Rust (to Montclair Research Corp.). USP 2 448 005, Aug. 24, 1948.

A process for shrinkproofing wool is described in which an aqueous, substantially stable emulsion is prepared, containing a copolymer of chloroprene and 5 to 60% by weight of a compound such as styrene, a buffer, and an emulsifying agent. To this emulsion is added, after polymerization, at least 25% by weight of a water-soluble neutral salt of an alkali metal to cause deposition

of 1 to 25% of copolymer upon the animal fiber. The copolymer can be applied before or after fulling, weaving or scouring, and in some cases in the dye-bath mixed goods may also be treated.

GHC TTD: 11-48

Shrinkproofing wool. Cloth finishing. Geo. A. Schreiner (to Cluett, Peabody & Co.). USP 2 450 022, Sept. 28, 1948.

This invention is claimed to be an improvement on the compressive shrinking process of USP 1 861 422. Such compressive shrinking has a tendency to apply a glaze or shine and a flattened or packed-down surface on certain fibers, particularly wool, synthetic fibers, etc. The object of the present invention is to provide an improved method and apparatus for compressively shrinking fabrics without the glaze or shine appearance. The shrunken fabric leaving the Palmer is led onto a clip tenter frame. While on this tenter frame the fabric is sprayed by one or more water sprays and then dried. While the fabric is wet, it is supported from beneath by suitable traveling supports such as continuous belts.

LCL TTD: 11-48

Stabilized finishes. Recent progress in stabilized finishes on rayon piece goods. R. W. Powell, Lincoln Bleachery. *Am. Dyestuff Reptr. 37*, 466-7, 470-1 (July 12, 1948).

Stabilized finishes are those which reduce the swelling, and thence the shrinkability, of rayon fabric. They are effective because they produce stable cross-linkages between the cellulose molecules. The application and uses of aldehyde processes using formaldehyde or glyoxal are reviewed. Aldehyde resin processes using resins formed from formaldehyde and urea, melamine or acetone, and caustic alkali processes are also discussed.

WPU,jr. TTD: 11-48

Water repellents. Chemical progress in water-repellency. Carl R. Bellwood, The Cravenette Co. *Textile Colorist 70*, 24, 44-5 (Aug. 1948).

Progress in making fabrics water-repellent is reviewed and the development of procedures for measuring the resistance of textiles to water is discussed in some detail. The effect of fabric construction on water resistance is also mentioned.

TTD: 11-48

Water repellents. Composition and process for imparting durable water repellent finish to textiles. E. Abrams (to Quaker Chemical Products Corp.). USP 2 446 864, Aug. 10, 1948.

Textiles materials, made of cotton, wool, silk, etc., can be made water repellent by impregnating them

with a substituted urea and resin. The substituted urea compounds used are of the type RNH-CO-NHR_1 in which R contains 12 or more C atoms and R_1 is hydrogen, an aliphatic or an aromatic group. The resins are selected from the urea-formaldehyde or melamine formaldehyde groups.
GNR TTD: 11-48

TESTING AND ANALYSIS IX

Cleaning. Performance of resin-treated fabrics in wet and dry cleaning. Dorothy S. Lyle & Marian R. Butler. *Rayon Textile Monthly 29*, 57, 58 (May, 1948); 66-8 (June, 1948).

The results of wet and dry cleaning on 7 fabrics treated with resin are given. The fabrics had been treated with Resloom, Lanasat and Sanco 400. In particular, the color fastness to light and dimensional stability were studied.
HAM TTD: 11-48

Crease resistance testing. Improved evaluation of the crease resistance of resin treated fabrics. R. D. DeWaard, A. Hvizdak & C. R. Stock, Am. Cyanamid Co. *Am. Dyestuff Reptr. 37*, 513-18, 536-37 (Aug. 9, 1948).

An apparatus has been developed to test and evaluate the crease resistant properties of melamine resin finishes easily yet precisely. By its use, the merits of finishes for reducing wrinkling may be studied routinely. The apparatus functions by creasing the test piece in a controlled vise, then measuring the angle of the crease produced at the apex. Vise pressure, size of sample, creasing time, and relaxation time were among the variables studied. A process of roller creasing was developed by which the area of application of the creasing force was reduced to a minimum. This avoided some of the more common difficulties encountered in this kind of testing.
WPU,jr. TTD: 11-48

Electron microscopy of wool. A method for electron microscopy of wool. Anon. *Textile Colorist 70*, 29, 52-3 (Aug. 1948).

A simplified shadowed replica technique for studying wool by means of the electron microscope has been developed at the National Bureau of Standards. The new technique of specimen preparation involves making a negative replica of the wool fiber in a thermoplastic film of ethyl cellulose or polystyrene which is thin enough to be examined directly in the electron microscope and which may be shadow-cast with a suitable metal for added contrast. Details of the technique are given.
TTD: 11-48

Fibrograph. New electronic instrument accurately analyzes fibers. Anon. *Rayon Textile Monthly 29*, 95 (July, 1948); *Textile Industries 112*, 143 (Feb. 1948).

A new electronic instrument for determining length and uniformity of fibers has been developed by the Fulton Sylphon Division of Robertshaw-Fulton Control Co. This instrument, known as the "Fibrograph", gives more accurate measurements than can be obtained by an expert classer. The results of comparative tests made at the University of Tennessee are given. TTD: 11-48

Labelling. Textile labelling—the Swedish textile industry's new deal. Th. C. Bergh. *Textil och Konfektion 5*, 38-41 (Mar. 1948); *in Swedish.*

A comprehensive scheme of textile labelling for Swedish manufacturers was announced in Stockholm on "Textile Day", March 16. At present, labelling is to be restricted to the more important lines of manufactured consumer goods, e.g., working clothes, men's wear, and sheeting. Silk, rayon, and fashion fabrics are omitted. The system of labelling will vary to some extent for wool, cotton, linen, and hosiery. The following data will be given: 1) Raw materials contents; 2) Weight per square meter; 3) Breaking strength; 4) Shrinkage (omitted for elastic fabrics and hosiery); 5) Special treatments—mothproofing, water-repellency, sanforizing, etc. Because of the scarcity of dyestuffs, the degree of color fastness is being omitted. Labelling is being restricted to those properties that can be reliably measured.
TTD: 11-48

Obtaining finer samples. The dye sampling method of measuring fiber length distribution. R. C. Palmer. *J. Textile Inst. 39*, T8-T20 (Jan. 1948).

An ingenious method of taking correct samples of fibers from card web or sliver is described. This method is superior to that of obtaining lengths of fibers by combing, since during the combing process many fibers are broken.
HAM TTD: 11-48

Photometer. Calibration of a photo-multiplier photometer. J. R. DeVore, New Jersey Zinc Co. (of Pa.). *J. Optical Soc. Am. 38*, 692-96 (Aug. 1948).

A photoelectric photometer, constructed for the measurement of fluorescent and phosphorescent brightness, has been calibrated so that the brightness curves will correlate with direct visual observations. When measuring fluorescent brightness, it is necessary to filter out the ultraviolet

light reflected from the sample by means of a "Noviol" filter (Corning No. 3389). TTD: 11-48

Plied yarn fabric. The strip strength of plain cotton cloth woven from folded [plied] yarns. L. F. Pickup. *J. Textile Inst. 39*, T260-T73 (Aug. 1948).

The effect of changing the ratio of "picks per unit length of cloth" to "folded (plied) warp twist per unit length of cloth" on the tensile strength of various fabrics is discussed. It was found that considerable loss in tensile strength in yarns during fabric manufacture occurred during weaving, due to the displacement of the single strands in the plied yarns. The practical application of the results and subjects for further investigation are discussed.

HAM TTD: 11-48

Standard soiled fabrics. Standard soiled fabrics for testing detergents and washing machines. Anon. *Textile Industries 112*, 217 (Sept. 1948).

Standard soiled fabrics of cotton, wool, acetate, viscose, and perhaps nylon are being produced (by the U. S. Testing Co.) for use in evaluating detergents and the efficiency of washing machines. Reproducible results may be obtained in the testing procedures by use of these fabrics which will not change in characteristics over a period of several months when stored in an ordinary desiccator at room temperature. TTD: 11-48

Water resistance tests. The effect of moisture content and other factors on water resistance tests. G. J. Mandikos, AATCC Res. Lab. *Am. Dyestuff Reptr. 37*, 584-6, 602 (Sept. 6, 1948).

The influence of several general external factors, and especially of humidity, on the water resistance of cotton fabrics was studied. Standard AATCC test methods were used. It was shown that water-resistant samples should be conditioned under standard conditions for immersion absorption tests, but that this is not necessary for rain-type and spray tests. Tap water and distilled water give similar results. Over-handling of specimens should be avoided, as it leads to considerably lower values in the case of spray testing.

WPU,jr. TTD: 11-48

Water resistance tests. A comprehensive comparison of the more common water resistance test methods existing today. G. J. Mandikos, AAT CC Res. Lab. *Am. Dyestuff Reptr. 37*, 587-95 (Sept. 6, 1948).

In a program planned by the AATCC Committee on Water Resistance, a comprehensive and comparative series of tests was conducted. Seventeen

of the most commonly-used test methods to evaluate water-resistant fabrics and water-repellent finishes were used on twenty-two fabrics. A study of the test data was made with particular consideration of the correlation of results furnished by each test method with respect to actual rain performance of fabrics. Results obtained from inter-laboratory check tests with several test methods are presented.

WPU,jr. TTD: 11-48

Physical properties IX 1

Acetate rayon yarns. The physical properties of cellulose acetate rayon yarns. H. DeW. Smith & H. R. Childs. *Rayon Textile Monthly 29*, 63-4 (Feb. 1948); 52-3 (Mar. 1948); 52-4 (June, 1948); 47-9 (Aug. 1948).

This series of articles reprinted from *Textile Fibers* by Matthew and Mauersberger, published by John Wiley & Sons, 1947, gives a very complete description of the physical properties of cellulose acetate rayon yarns. The information given is particularly useful to the textile engineer as well as to those experimenting with cellulose acetate yarns.

HAM TTD: 11-48

Determination of twist. The determination of twist in yarns. Tentative (Textile) specification No. 12, 1947. *J. Textile Inst* 38, S21-2 (Dec. 1947).

Significant in this proposed method is the relatively large number of test suggestions, as follows: Spun yarn (single), 50 tests for 1 inch specimen, 100 tests for ⅓-inch specimens; Ply and cabled yarn, 20 tests for 10-inch specimen; single, continuous filament, 50 tests for 10-inch specimen.

HAM TTD: 11-48

Frictional properties of wool. Measurement of the frictional properties of wool fibers. Daniel Frishman, Arthur L. Smith & Milton Harris. *Textile Research J. 18*, 475-80 (Aug. 1948).

A fiber friction meter for measuring the surface frictional properties on individual wool fibers is described. Measurements made on many wool fibers indicate large variations in frictional properties. No significant correlation was found in a study of the relationship between friction and diameter. On all cases, measurements made in the dry state resulted in lower values than measurements made on the same fibers in the wet state.

TTD: 11-48

Jute yarns. The extensibility of jute yarns. C. R. Nodder, Indian Central Jute Committee. *Jute*

& Canvas Rev. 20, 17, 20 (Sept. 1948).

For jute yarns of a specified count and twist factor, the extension at break is roughly proportional to breaking load, and, other things being equal, does not vary greatly with fiber quality. In addition to a discussion of extensibility, data are given for a number of different yarns.

TTD: 11-48

Microscopy. Photomicrographs tell story. Anon. *Textile Industries 112,* 119-22 (Sept. 1948).

The microscope and photomicrography are being used to assist in solving practical textile mill problems and in the testing laboratories. A discussion of some of the work being done with the microscope on fiber identification, fiber maturity, denier, and distribution, uneven dyeing, and fabric study is given with illustrative photomicrographs. TTD: 11-48

Nomogram. [Nomogram for fabric weight calculations]. Leonard Shapiro, Alrose Chem. Co. *Textile Industries 112,* 100-01 (Apr. 1948).

A nomogram is given that is employed for conversion of linear weight specifications for fabrics to weight-per-unit-area when the width is known. An example of the use of the nomogram is also given. TTD: 11-48

Properties of fabrics. Analysis of a fabric. R. Farlet. *Textielwezen 4,* 43 (Mar. 1948); *in French.*

Methods of determining the weight, the number of threads, and means of determining the right side of the fabric, and the warp from the weft are described. (to be continued). TTD: 11-48

Properties of rayon. Study of the longitudinal mechanical properties of viscose and acetate rayon and of the origin of drawn filaments. 2nd part. Mechanical properties of viscose and acetate 100 D., 40 B. subjected to constant loading as a function of time. M. le Chanoine Pinte & M. Henno, Centre de Recherches de la Soierie. *Bull. Inst. Textile de Frence* No. 6, 35-59 (June, 1948); *in French.* (cf. TTD: *5,* 323).

Micrometers for measuring length and for recording the data are described and illustrated. Data were obtained at 18°C and 65% R.H. over 24 hr. periods and curves were plotted for elongation vs. force, and for loading and unloading as a function of time. The effect of R.H. on elongation as a function of the load for 24-hr. periods was also measured. It is concluded that elongation is essentially dependent upon relative humidity and the time of action of the extending force.

Aqueous swelling and viscosity are significant in relation to these variables. TTD: 11-48

Relaxation and flow. Relaxation and flow in cellulose fibers. R. Meredith. *J. Textile Inst 39,* P245-52 (July, 1948).

Stress relaxation of cotton yarns was investigated at constant elongation and at very short times (down to 0.001 second) after loading. The results are interpreted in terms of the Eyring theory of rate processes in mechanical behavior for the purpose of explaining the effect of rate of loading on tensile strength.

HW TTD: 11-48

Single fiber friction. Measurement of friction between single fibers. III. Influence of different treatments on the frictional properties of wool fibers. Joel Lindberg, Swedish Inst. for Textile Research. *Textile Research J. 18,* 470-74 Aug. 1948 (See TTD: *5,* 449, 472)).

The friction of wool fibers at different loads was measured and a previously derived equation for the anti-scale friction was tested. The friction at temperatures between 20° and 90°C was measured. The friction at various pH values after treatment with different nonfelting agents was measured and no appreciable change in friction was obtained. The friction was measured after different abrasional treatments and in all cases there was an increase in the frictional coefficients. The effects of chemical and mechanical treatments on the coefficient of friction are discussed.

TTD: 11-48

Single fiber friction. The frictional properties of wool. Joel Lindberg, Swedish Inst. for Textile Research. *Textil och Konfektion 5,* 170-71, 173 (Aug. 1948); *in Swedish.*

In connection with a study of the frictional properties of wool, a new apparatus for measuring the friction between 2 single fibers, called a twist friction meter has been constructed. With this apparatus measurements have been made of the friction under different pH, temperatures, and after various chemical and mechanical treatments. It is shown that wool has a remarkably low coefficient of friction and that nearly all treatments affecting the friction produce an increase of the coffiecient. The felting problem is regarded from a new angle and a thermodynamic theory for the felting capacity is advanced. The main feature of the theory is that the energy transferred to a fiber mass is used as work of deformation and work of friction and if these 2 factors are determined, it may be possible to calculate the fiber movement. TTD: 11-48

Testing textile fibers. A cumulative extension test for plasticity of textile fibers. R. Meredith & F. T. Peirce. *J. Textile Inst. 39,* T159-T184 (May, 1948).

The authors describe an instrument for the determination of the total unrecovered extension of a yarn or cord. The test is designed to discriminate between a plastic extension leading to rupture by flow and an elastic or recoverable extension that can be repeated indefinitely in service.
HAM TTD: 11-48

Yarn numbering. Determination of yarn count on yarn number. Anon. *J. Textile Inst. 38,* S17-S21 (Dec. 1947).

This is a tentative standard textile specification (No. 11, 1947) and describes in detail a method of test for determining yarn number. A novel feature is the use of a "skein gauge", by means of which the girth of the skeins are accurately determined under a predetermined tension.
HAM TTD: 11-48

Young's modulus. The bending modulus of animal fibers. R. N. Khayatt & N. H. Chamberlain. *J. Textile Inst 39,* T185-97 (May, 1948).

This article discusses the determination of Young's modulus for wool fibers by a method involving the bending of single fibers, and compares the modulus thus found with the values found from the stress-strain relationship. Young's modulus by the bending experiments was lower for all materials tested, being only about ½ as great for a sample of human hair and a particular wool.
HAM TTD: 11-48

BRITISH STANDARDS INSTITUTION YEARBOOK—1947. London, British Standards Institution. 324 pp.; price: 3/6 post free.

Reviewed in *Silk & Rayon 22,* 570 (Apr. 1948).
TTD: 11-48

Chemical analysis IX 2

COLORIMETRIC METHOD OF ANALYSIS. Foster Dee & Cornelia T. Snell. New York, D. Van Nostrand Co., 1948; 3rd ed.; 239 pp.; price: $4.50.

Reviewed in *Rayon Textile Monthly 29,* 111 (June, 1948). TTD: 11-48

TEXTILE MILLS X

Textiles in Sweden. The Swedish woolen and worsted industry. J. B. Wathey, Bocon Chem. Co. *Am. Dyestuff Reptr. 37,* 559, 561 (Aug. 23, 1948).

The general practices in the Swedish woolen and worsted industry are surveyed and some of the practices compared with the corresponding American practices.
WPU,jr. TTD: 11-48

APPLIED TEXTILES. Geo. E. Linton & Jos. J. Pizzuto. 4th ed. Lifetime Editions, Inc., 1948; 384 pp.; price: $6.00.

Reviewed in *Rayon Textile Monthly 29,* 111 (June, 1948). TTD: 11-48

MACHINERY, MANAGEMENT AND CONTROL IN A WOOL TEXTILE FACTORY. D. R. H. Williams. Manchester, Emmott & Co., Ltd., 1947; 245 pp.; Price: 30c.

Reviewed in *J. Textile Inst 39,* P86 (Feb. 1948).
TTD: 11-48

TOWARDS INCREASED CLOTH PRODUCTION. Vadilal Lallubhai. Fort Bombay, India, Padma Publications, Ltd., 1947; 103 pp.; price not given.

Reviewed in *Rayon Textile Monthly 29,* 111 (June, 1948). TTD: 11-48

Buildings, machinery, power X 1

Aluminum in textile machinery. Preparatory and finishing equipment use aluminum. H. E. Menking. *Textile World 98,* 143-47, 214, 216 (Oct. 1948).

In operations in which lightness, dynamic balance and chemical resistance are essential, aluminum is finding wide usage. These include quills, bobbins, beams, and other package holders. Certain peroxide solutions, acids, and neutral dyes can be handled in aluminum equipment, but vat, sulfur, and diazotized dyes cannot. The use of chrome dyes and direct colors in aluminum equipment will sometimes develop offshades. Inhibitors or resin protective coatings will frequently solve the problem. Aluminum is finding wide usage in the construction of ducts and hoods.
LCL TTD: 11-48

Automatic controls. Modern application of automatic control in textile processing. Anon. *Rayon Textile Monthly 29,* 105-07 (Apr. 1948).

Control of size cook and size storage, automatic control of the slasher, and control of many dyeing operations are described. The importance of devices for providing smooth starting of machines is also pointed out. TTD: 11-48

Drop-wire maintenance. Drop-wire maintenance aids weaving efficiency. W. E. Wenrich. *Textile World 98,* 141, 207-214 (Oct. 1948).

Drop-wire carrier devices are cost-saving expedients but involve difficulties in cleaning and main-

tenance of the drop-wires. The problem of cleaning drop-wires depends on the nature of the dirt accumulations in the yarn entry. If the yarn can withstand a thorough drenching, a pressure gun charged with a suitable cleaning solvent might be used. However, if the dirt is difficult to remove, the drops might have to be removed from the warp and cleaned separately. The wires may be placed in a basket and cleaned by dipping into a suitable solvent. Another method involves packing the loose drop wires in a rotating barrel with sawdust which acts as an abrasive in cleaning.
LCL TTD: 11-48

Electrostatic neutralizer. Elimination of static electricity. Robin Beach. USP 2 449 972, Sept. 28, 1948.

A method is described of neutralizing static electricity impressed on moving surfaces such as traveling belts or webs. It is claimed that grounded sharp brushes, mounted by means of an insulating bar a few inches above the surface, become inductively charged to an amount sufficient to ionize the air and discharge the surface.
ECH TTD:11-48

Fluid drive. Fluid drive adapted to textile machinery. Anon. *Rayon Textile Monthly 29*, 91 (July, 1948).

This article describes in brief the adaptation of the fluid drive, commonly used in automobiles, as applied to the driving of textile machinery, particularly for driving ring spinners, carders, and calenders.
HAM TTD: 11-48

Heater. New unit heater. Anon. *Textile Age 12*, 113-14 (Sept. 1948).

The textile Thermolier is a new unit heater, designed especially to operate under the dusty, linty conditions in textile plants. Heat transfer surfaces of a new design with smooth contours and a partial self-cleaning action are features of this heater. TTD: 11-48

Machinery. New equipment and chemicals. Anon. *Chem. Industries 63*, 402-22, 432-72 (Sept. 1948).

The annual survey of new equipment and new chemicals for 1947-8 includes many items of potential use to the textile industry. The survey is presented in tabulated or summarized form.
LCL TTD: 11-48

Machinery. Improved textile machinery promises lower costs. Anon. *Rayon Textile Monthly 29*, 101-03 (June, 1948).

A brief survey is given of new and improved

preparatory machinery, twisting machines, redraw and reeling machines, slashers, and looms.
TTD: 11-48

Machinery. Latest trends and necessary developments of dyeing, printing, and finishing machinery. Marcel Pagerie, Allied Textile Printers, Inc. *Rayon Textile Monthly 29*, 85-6 (July, 1948).

The importance of making the machine conform to the needs of the fabric rather than making the fabric conform to the needs of the machine is emphasized. Recommendations are given for improvement of machines for various textile finishing operations. TTD: 11-48

Maintenance. Centralized preventive maintenance at Mt. Vernon-Woodberry Mills (Tallassee). L. D. Sayers, Mt. Vernon-Woodberry Mills. *Textile Industries 112*, 89-100 (Feb. 1948).

The objectives and methods of operation of a centralized preventive maintenance system are described. Examples of record forms used in the program are given. The overall object is stated as, "A program sufficiently effective that we will be able to work on any machine when we *want* to, instead of when we *have* to." TTD: 11-48

Maintenance. Check chart for electrical equipment. Anon. *Textile Industries 112*, 191 (Sept. 1948).

A check chart is given for preventive maintenance of electrical equipment (prepared by Westinghouse) that should aid in reducing repairs.
TTD: 11-48

Materials handling. Materials handling at Pacific Mills. Francis A. Westbrook. *Textile Industries 112*, 116-19 (Feb. 1948).

The materials handling equipment in use in the South Carolina plants of Pacific Mills is described and illustrated. TTD: 11-48

Materials handling. Automatic materials handling. Anon. *Textile Industries 112*, 127-9 (Sept. 1948).

An illustrated description is given of the automatic materials handling system in a rayon fabric plant (at Scottsville plant of the U. S. Rubber Co.). The system consists of storage racks that are actually gravity conveyors, fork lift trucks, a tramrail system, etc. TTD: 11-48

Materials handling. Conveyor system for beams. Anon. *Textile Industries 112*, 185, 187 (Sept. 1948).

Section beams are moved from the spooler room to the slasher room by a conveyor system that con-

sists of a series of tracks, racks, and an electric hoist. A diagrammatic sketch and illustrations are given for the system. TTD: 11-48

Materials handling. Coal handling conveyor system. Anon. *Textile Industries 112,* 117 (Oct. 1948).

A description and diagrammatic sketch is given of a new coal silo and storage bin that incorporates a screw-type coal handling conveyor system. Savings in time and labor are reported from use of this conveyor system. TTD: 11-48

Materials handling. Automatic dispatch used for transporting yarn. C. Mallard Bowden. *Textile World 98,* 126, 127 (Oct. 1948).

The Beaumont Manufacturing Company at Spartanburg, S. C., handled 75-100 full warper beams, weighing a gross of 650 lbs., every 24 hours by a new overhead, electrically driven, automatic conveyor system. Built into the track is a print-weigh scale of Toledo Scale Company. Photographs and a sketch of the layout are included.
LCL TTD: 11-48

Power transmission. The heart of a textile mill is efficient power transmission. *Rayon Textile Monthly 29,* 97-9 (Mar. 1948).

Efficient power transmission is discussed with reference to power transmission appliances, types of bearings, lubrication of ball-bearings, types of anti-friction bearings, types of textile motors, types of transmission drives, belt installation and maintenance, and latest multiple V-belt drives.
TTD: 11-48

Redesigning machinery. Redesigning production machinery for improved appearance and safety. Burton D. Morgan, Johnson & Johnson. *Textile Industries 112,* 133, 137, 139, 141 (Feb. 1948).

The redesigning of several production machines is described. The fundamental principles followed are given, and the advantages and disadvantages of different designs for different type machines are discussed. TTD: 11-48

Roofs. Damage to roofs by wind can be minimized. P. M. Thomas. *Textile World 98,* 145, 216-221 (Oct. 1948).

Three-fourths of all wind damage to mill buildings happens to the roofs. Proper anchoring of the roofs can save half of this total damage. Sketches of 8 methods of roof anchoring are given. As wind blows over a roof it creates a suction of the eaves projections and the open windows on the windward side of the building. This suction strains the framing of the roof and will lift off certain sections. Some of the more common defects in roof covering are rotted decking, webbed surface, cracked felt, blisters, and poor fastening. Adequate maintenance as well as original design can reduce to a very large extent the damage caused by wind storms.
LCL TTD: 11-48

Sanitizing material. New sanitizing materials. Anon. *Textile Age 12,* 118 (Sept. 1948).

Oakite Sanitizer No. 1, a quaternary ammonium type of liquid germicide-disinfectant, may be used to control slime and algar, and for long-time sanitizing protection in textile mill humidifying equipment, recirculated water, and stored water. It is stable, non-corrosive, non-toxic, and has wetting and penetrating action. TTD: 11-48

Smoke prevention. Importance of furnace design in industrial smoke prevention. Anon. *Silk & Rayon 22,* 574-75 (Apr. 1948).

Methods of obtaining maximum efficiency of fuel consumption and the elimination of smoke are discussed briefly. TTD: 11-48

Transfer applying machine. Transfer applying machine saves time and energy. Anon. *Textile Industries 112,* 159, 161 (Oct. 1948).

A transfer applying machine which automatically raises and lowers the stamping iron increases production at the stamping process. The machine may be used on any type of flat knit or woven goods such as stockings or handkerchiefs.
TTD: 11-48

Water. Iron bacteria in industrial process water. Lewis B. Miller. *Rayon Textile Monthly 29,* 77-80 (May, 1948).

Iron bacteria are defined and their injurious effect on water supplies is discussed. Normally, the growth of these organisms is slow, but it may become rapid under favorable conditions. They may cause iron stains, spots and discolorations which reduce the quality of the finished goods. Study of these organisms has been difficult because no successful means of growing them in solid media has been developed. A more satisfactory method of growing the filamentous iron bacterium *crenothorix* is described and pictures of the cultures are presented. Several factors were found to favor the growth of this organism and a number of substances were found which inhibit its growth. Chlorine or hypochlorite appear to be the most satisfactory bactericide for continuous use, but they may interfere with dyeing. In most cases, a combination of chemical and mechanical treatments proves more effective than either alone. Each water supply presents a different problem,

however. There is a bibliography with 23 references.
EA TTD: 11-48

Water. Complete de-mineralisation of water by a three stage process. Anon. *Silk & Rayon 22*, 718 (May, 1948).

A process for removing minerals or salts from water is described briefly. The three steps of the process are: 1) the water is passed through a carbonaceous or resinous ion exchanger (zeolite), which exchanges metallic ions such as calcium, magnesium and sodium for equivalent quantities of hydrogen; 2) the effluent from the first stage is then passed through a resinous material which is not an ion exchanger, but rather an acid adsorber, which, within the lmits of its capacity, adsorbs mineral acids, the carbonic acid passing through it unchanged. Silica is not adsorbed or affected; 3) the water is passed through a decarbonator, cascading over wood trays against an air current, delivered by a blower, thus reducing carbon dioxide to a few parts per million. The process water is saturated with oxygen and low in pH value, and is highly corrosive, particularly upon being heated. A cold water de-aerator can be used instead of the decarbonator and oxygen as well as carbon dioxide will be removed. Additional operating details are given. TTD: 11-48

Water. Deep well supplies for rayon and textile processing. Anon. *Silk & Rayon 22*, 286 (Feb. 1948).

The advantages of deep well water supplies and characteristics of the water are discussed with reference to its use in textile processing.

Water purification. Water purification and waste disposal. Henry Miedendorp. *Rayon Textile Monthly 29*, 85-7 (May, 1948).

The principles and practices of water purification and waste disposal are reviewed briefly. A plan for the collection of finishing plant waste is outlined, in which the liquors are collected in a sump in the cellar below the vats and tanks. Incineration is recommended as a method of sludge disposal. TTD: 11-48

Water softener. Automatic Zeolite softener. Frank D. Prager (to Graver Tank & Mfg. Co., Inc.). USP 2 447 477, Aug. 17, 1948.

This invention applies to automatic Zeolite softeners, filters, and like equipment. All operating valves are individually controlled by a single pilot valve unit, which comprises only 2 movable valve members and which is actuated by a standard water meter. Individual hydraulically-operated diaphragm valves control the following pipe lines:

influent, service, backwash, waste, brine and rinse. The electrical circuit is simplified to include only 4 switches for a softener, or 3 switches for a filter. The various positions of the apparatus are indicated by a simple rotating dial which can be used to vary these positions and adjust the program cycle at will.
LCL TTD: 11-48

Worsted mill. Talladega's new worsted plant. Anon. *Textile Industries 112*, 122, 124 (Feb. 1948).

A brief description of the facilities and equipment of the new plant of Highland City Mills, Inc., is given. The plant will manufacture quality worsted knitting and weaving yarns on the American system. TTD: 11-48

RUBBER IN TEXTILE FACTORIES Colin Macbeth. Brit. Rubber Development Board. 136 pp.; gratis, post free.

Reviewed in *Silk & Rayon 22*, 570 (Apr. 1948). TTD: 11-48

Lighting and air X 2

Air conditioning. Air conditioning in textile mills. H. Herkimer. *Rayon Textile Monthly 29*, 94, 96 (Mar. 1948); 103, 104 (Apr. 1948); 59, 60 (May, 1948).

The author discusses air conditioning under the following headings: immunology, types of textile fibers, humidity in textile production, atmospheric conditions, control of regain, drying and conditioning, controlling rate of chemical reactions, elimination of static electricity, humidification systems and summary. A glossary of terms used in air conditioning is given in the first article of the series.
HAM TTD: 11-48

Air conditioning. Manufactured weather a must for quality and lower cost textiles. Anon. *Rayon Textile Monthly 29*, 97-9 (Feb. 1948).

A general discussion of air conditioning and its application to textile operations is given. TTD: 11-48

Air conditioning. Modern nylon throwing plant. Anon .*Textile Industries 112*, 131-4 (Sept. 1948).

The air conditioning system of a modern nylon throwing plant (Duplan Corp.) consists of 4 separate systems which permit close tolerances of control for the departments requiring different atmospheric conditions. All of the power consumed by the mill is dissipated in the form of heat with the result that no heating is required for the

operating areas and 2 oil-fired boilers are used for the non-operating areas and for heating during shutdown periods. TTD: 11-48

Lighting. Cost reduction through better lighting. Anon. *Rayon Textile Monthly 29*, 89-91 (July, 1948).

The advantages of good lighting and the trend toward use of fluorescent lamps is discussed. Suggestions are given for the proper maintenance and operation of these lamps. TTD: 11-48

Wastes X 3

Waste. Waste reduction and control. Ben H. Crawford, Southeastern Engineering Co. & Textile Industries. *Textile Industries 112*, 95-112 (Oct. 1948).

A survey is given of the waste losses in a mill with costs due to waste calculated and the primary factors of waste discussed. Methods of reducing waste in materials, machinery, methods, and manpower are discussed, and the savings to mills when waste is reduced are emphasized.
TTD: 11-48

Hazards; operations; efficiency X 4

Fork truck. 2,000-lb. fork truck for narrow aisles. Anon. *Textile Industries 112*, 194 (Oct. 1948).

A new, gas-powered fork truck that is designed for materials handling in cramped quarters is briefly described and illustrated. TTD: 11-48

Good housekeeping. Housekeeping check list. Anon. *Textile Industries 112*, 112-15 (Feb. 1948).

Systemmatic maintenance and housekeeping will produce gratifying results. A set of check lists covering the various cleaning operations in an average mill is given. It is suggested that the check list be mounted on a clip board to facilitate the making of notations. TTD: 11-48

Indicator. Indicator. Paul W. Markwood (to American Enka Corp.). USP 2 447 584, Aug. 24, 1948.

An educational and directing device for directing the sequence of servicing cones during coning operations in rayon manufacturing plants is described. The device comprises a disk chart bearing instruction indicia which guide the operative in performing his duties, thereby preventing errors resulting from the inability of operators to remember the sequence of operations in rayon coning and manufacturing. TTD: 11-48

Processing records. Processing records prove value. Horace L. Pratt. *Textile Industries 112*, 106-08, 110 (Mar. 1948).

The use of processing records is discussed with reference to drawing and spinning operations. Suggestions are given for the filing and evaluation of the records. The time and expense involved in making and filing such records can be justified only if they can be utilized in reducing cost, waste, or accidents and in increasing production.
TTD: 11-48

Quality control. System for maintaining quality control. Erwin Hard. *Textile Industries 112*, 105-07 (Feb. 1948).

A system for quality control is described for use in connection with cloth room, slashing and tying in, warping, spooling, and spinning and roving. Specimen report forms are illustrated.
TTD: 11-48

Sprinkler system. Hosiery mill has first rate-of-rise sprinklers. Anon. *Textile World 98*, 128, 129 (Oct. 1948).

The Waldensian Hosiery Mills, Pauline Plant, has a new Suprotex sprinkler system. The system operates as follows: the sprinkler pipes are normally dry. In case of fire, heat-actuated devices located on the ceiling transmit an impulse to sound an alarm gong and to open a water valve, admitting water to the sprinkler system. Since the links in the sprinkler head do not fuse until a predetermined heat intensity is reached, workmen have time to snuff out small fires before the sprinkler goes into operation. Fire loss, as well as water damage, can therefore be prevented. The fusable links in the sprinkler heads are selected to release at different temperatures.
LCL TTD: 11-48

Supplies. Supply control system. R. M. Ashner, P.O.M. Co. *Textile Industries 112*, 85-8 (Mar. 1948).

The organization of a central supply room and substores is described. Proper control of supplies can reduce excessive inventories of supply parts, and reduce loss of time by fixers in obtaining needed parts. TTD: 11-48

Thawing pipes. Thawing frozen water pipes. Anon. *Textile Industries 112*, 129, 211, 215 (Oct. 1948).

This is a discussion of the use of electric welding equipment to thaw frozen water pipes. This method of thawing pipes is advantageous since it is self-regulating and can be accurately controlled.
TTD: 11-48

BASIC SCIENCES XI

Alkali cellulose. Process for making alkali cellu-

lose. Andreas Ruperti (to Ciba, Ltd.). USP 2 447 914, Aug. 24, 1948.

If soluble organic cellulose ethers are desired, alkali at 60-90°C for ½ to 20 sec. and squeezing for water soluble ethers, less excess alkali is required. This patent claims a process for making an alkali cellulose, rich in alkali, by soaking the cellulosic material in concentrated (40-50%) alkali at 60-90°C for ½ to 20 sec. and squeezing out the excess solution after wetting is complete but before maximum swelling is obtained.

GNR TTD: 11-48

Cellulose ethers. Process for treating cellulose ethers to improve their dissolving properties. Leon Lilienfeld (to Lilienfeld Patents, Inc.). USP 2 447 756 & USP 2 447 757, Aug. 24, 1948.

Processes are described for preparation of a cellulose ether of sufficiently high alkali solubility that its alkaline solution may be usefully shaped prior to coagulation. An otherwise insufficiently alkali-soluble cellulosic ether, as starting material, is dissolved completely in alkali by utilizing the increased dissolving action of sodium hydroxide solutions obtainable near the freezing point. The mass is then coagulated either by introduction of carbonate ions or essentially with water. The precipitate thereafter exhibits the desired high alkali-solubility without recourse to additional refrigeration.

MC TTD: 11-48

Linear molecules. The thermodynamics and statistics of solutions of high molecular weight. Arnold Münster. *Kolloid Zeitschrift 110*, 58-71 (Aug. 1948); *in German.*

This is a summary of recent work, especially from foreign (non-German) sources. There is a section on the polydispersity of linear molecules and a bibliography with 61 references. The paper is highly mathematical. TTD: 11-48

CHEMISTRY AND TECHNOLOGY OF WAXES Albin H. Warth. New York, Reinhold Publishing Corp., 1947; 519 pp.; price: $10.00.

Reviewed in *Rayon Textile Monthly 29*, 105 (Feb. 1948). TTD: 11-48

ORGANIC CHEMISTRY, vol. IV: Chemistry of Carbon Compounds. Victor von Richter & Richard Anschuetz. New York, Elsevier Publishing Co., Inc., 1947; 498 pp.; price: $12.00.

Reviewed in *Rayon Textile Monthly 29*, 105 (Feb. 1948). TTD: 11-48

TEXTILE RESEARCH XII

Infrared analysis. Textile analysis by infrared technique. Philip Sadtler, S. P. Sadtler & Sons, Inc. *Am. Dyestuff Reptr. 37*, 555-58 (Aug. 23, 1948).

The infrared spectrophotometer is one of the newer instruments of chemical physics which has been applied for control and research to analytical problems. Its use is applicable to anhydrous samples that are transparent to infrared radiation. Solids are handled by dissolving in a solvent, or making into a film. Both pure chemicals and mixtures may be examined by infrared. In the textile field, finishing and process chemicals may be extracted from textiles and examined. Chemicals purchased for use by the textile industry, completed textile fabrics, fibers which will go into solution, finishes, dyes, oils, solvents and plastics may all be studied. The spectrograms obtained are composites of the various elements of structure in the compound or mixture under consideration.

WPU,jr. TTD: 11-48

Textile education. P.T.I. expands program—starts new building. Howard P. Galloway. *Textile World 98*, 137, 188-192 (Oct. 1948).

The Philadelphia Textile Institute has started new construction, revised its courses, and formed the P.T.I. Association to obtain financial support. The expanded courses increase the emphasis upon fundamental education. The Institute has achieved acknowledged collegiate status and has doubled its faculty. A B.S. degree in textile engineering is granted for successful completion of its four-year course. One requirement for graduation is employment during two summers in mills of the industry. A number of research projects are also underway.

LCL TTD: 11-48

Textile research. Textile technology in perspective. John F. Warner, Riegel Development Lab. *Am. Dyestuff Reptr. 37*, 553-54 (Aug. 23, 1948).

This is an address reviewing the growth of research in textiles in recent years, and discussing present problems in the conduct of research. The desirability of an autonomous research and development dept. in a textile organization, the recommended organization of such a dept., and the organization of the Riegel Textile Corp. research dept. are discussed.

WPU,jr. TTD: 11-48

Textile research. Swedish textile research. Nils Gralén. *Textil och Konfektion 5*, 44-46, 57-58 (Mar. 1948); *in Swedish.*

Textile research in Sweden is young. The Textile

Research Inst., Gothenburg, began work in 1946, and now has a staff of 20 persons, including 7 scientists. The program is limited to fundamental research. An applied textile research laboratory, at Norrköping, also began work in 1946. Its staff consists of 8 persons. To a certain extent, other

institutions carry on textile research. Good results have been obtained so far, but more applied research is needed to adapt the results of fundamental research to industrial purposes.

TTD: 11-48

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